

1987

CHIGNIK MANAGEMENT AREA  
SALMON AND HERRING ANNUAL MANAGEMENT REPORT

By:

Pete Probasco and Jeff Fox

Regional Information Report<sup>1</sup> No. [REDACTED]

Alaska Department of Fish and Game  
Division of Commercial Fisheries  
211 Mission Road  
Kodiak, Alaska 99615

May 1988

<sup>1</sup>The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished divisional reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Division of Commercial Fisheries.

1987 Annual Distribution

Copies to:        Director of Commercial Fisheries - Juneau  
                  Westward Region - Regional Supervisor, Kodiak  
                  Central Region - Regional Supervisor, Anchorage  
                  AYK Region - Regional Supervisor, Anchorage  
                  Southeastern Region - Regional Supervisor, Juneau

\*\*\*\*\*

Copies also sent to these individuals in the Westward Region:

Pete Probasco	-	Kodiak
Larry Malloy	-	Kodiak
Dave Prokopowich	-	Kodiak
Arnie Shaul	-	Cold Bay
Len Schwarz	-	Sand Point
Dana Schmidt	-	Kodiak
Bruce Barrett	-	Kodiak
Jim McCullough	-	Kodiak
Pat Holmes	-	Kodiak

## TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES.....	i
LIST OF FIGURES.....	iii
LIST OF APPENDICES.....	iv
CHIGNIK SALMON FISHERIES	
Background.....	1
Sockeye Salmon.....	2
Pink Salmon.....	3
Chum Salmon.....	4
Coho Salmon.....	5
Chinook Salmon.....	5
Introduction.....	6
Description of Area.....	6
Economic Value of the 1987 Salmon Harvest.....	7
Overview of the 1987 Salmon Season.....	7
Sockeye Salmon.....	7
Pink and Chum Salmon.....	10
Coho Salmon.....	11
Chinook Salmon.....	11
LITERATURE CITED.....	123

# LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Chignik Management Area Commercial Salmon Harvest Report 1987.....	13
2. Catch and Escapement by District and Section, 1987....	14
3. Catch and Escapement Summary, 1987.....	19
4. Chignik Management Area Commercial Salmon Catch and Effort by Stat Area and Week.....	24
5. Chignik Management Area Salmon Catches 1960-1987.....	27
6. Chignik River Chinook Salmon Escapement Counts, 1987..	28
7. Chignik River Chinook Salmon Run, 1960-1987.....	29
8. Daily Sockeye Salmon Escapement Estimates at Chignik Weir, 1987.....	30
9. Sockeye Salmon Catch and Escapement in the Chignik Lakes System, 1987.....	33
10. Harvest of Chignik Sockeye Salmon from 1964-1987.....	39
11. Daily and Cumulative Return of Sockeye Salmon, Black Lake Stock, 1987.....	49
12. Daily and Cumulative Return of Sockeye Salmon, Chignik Lake Stock, 1987.....	53
13. Chignik Sockeye Salmon Runs 1954-1987.....	58
14. 1987 Chignik Area Pink Catch and Escapement by District.....	60
15. Chignik Area Pink Salmon Catch and Escapement From 1962-1987.....	61
16. Chignik Area 1987 Chum Salmon Catch and Escapement by District.....	64
17. Chignik Area Chum Salmon Catch and Escapement 1962-1987.....	65
18. Chignik Area Pink and Chum Salmon Catch and Escapement 1962-1987.....	68
19. Estimated Total Pink and Chum Salmon Escapement .....	69
20. Pink and Chum Salmon Return Per Spawner Central and Eastern Districts.....	77
21. Pink and Chum Salmon Return Per Spawner Western and Perryville Districts.....	78
22. Age Composition of Sport Caught Chinook From Scale Sample Collected in Chignik River.....	79
23. Age Class Composition, in Percent, from the 1987 Chignik Lagoon Sockeye Salmon Commercial Catch.....	80
24. Age Class Composition, in Percent, of the Black Lake Sockeye Escapement Samples by Date of Sample..	82
25. Age Composition of the Chignik Lagoon Coho Catch Samples by Sample Day, 1987.....	83
26. Daily Abundance of Black Lake Sockeye Salmon in the Escapement by Age Class, 1987.....	84
27. Daily Abundance of Black Lake Sockeye Salmon in the Catch by Age Class, 1987.....	86
28. Daily Abundance of Chignik Lake Sockeye Salmon in the Escapement, by Age Class, 1987.....	88
29. Daily Abundance of Chignik Lake Sockeye Salmon in the Catch by Age Class, 1987.....	90



# LIST OF TABLES (Continued)

<u>Table</u>	<u>Page</u>
30. Summary of the Escapement, Commercial Catch and Total Run by Age Class and Stock for the 1987 Chignik Lakes Sockeye Salmon Run, Estimated by Scale Pattern Analysis.....	92
31. Price Paid Fishermen for Salmon in 1987 Based on Fish Ticket Data.....	94
32. Economic Value of Salmon to Chignik Area Fishermen, 1970-1987.....	95
33. Economic Value of Bottomfish to Fishermen for 1987 in the Chignik Area.....	99
34. Chignik Area Subsistence Harvests 1976-1987.....	100
35. List of 1987 Salmon Vessel Operators in the Chignik Area.....	101
36. Chignik Area Effort in Units of Seine Gear Fished, 1966-1987.....	104
37. List of Chignik Area Processors.....	105
38. Chignik Area 1987 Stream Surveys, Black Lake Tributaries.....	106
39. Chingik Area Stream Surveys, 1987.....	107

## LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Map of Chignik Management Area.....	12
2. Chignik Sockeye Escapement (Graph).....	32
3. Chignik Area Sockeye Harvest (Graph).....	41
4. Chignik Lagoon Sockeye Harvest (Graph).....	42
5. Hook Bay Sockeye Harvest (Graph).....	43
6. Aniakchak Bay Sockeye Harvest (Graph).....	44
7. Western District Sockeye Harvest (Graph).....	45
8. Perryville District Sockeye Harvest (Graph).....	46
9. Cape Igvak Sockeye Harvests (Graph).....	47
10. Stepovak Area Sockeye Harvest (Graph).....	48
11. Daily Abundance by Stock (Graph).....	57
12. Sockeye Age Composition by Day (Graph).....	93
13. Economic Value of Salmon to Chignik Area Fishermen 1970-1987 (Graph).....	97
14. Average Value Per Permit Holder 1970-1987 (Graph).....	98

## LIST OF APPENDICES

<u>Appendix</u>	<u>Page</u>
A. 1987 Salmon Board Report.....	124
B. 1987 Salmon Management Plan.....	146
C. 1987 Herring Report to the Board.....	161
D. 1987 Herring Management Plan.....	171
E. 1987 Sockeye Forecast.....	182
F. 1987 Salmon Regulations.....	187
G. 1987 Salmon Emergency Order Abstract.....	192
H. 1987 Herring Regulations.....	205
I. 1987 Herring Emergency Order Abstract.....	207
J. 1987 Tide Tables.....	210
K. Table 1. 1987 Calendar Weeks.....	212

## Chignik Salmon Fisheries

### Background

Sockeye salmon (Onchorhynchus nerka Walbaum) is the most important fishery resource in the Chignik system. During June and July the majority of the commercial fishing activity is focused on this species. From mid July through August in years of high pink salmon (Onchorhynchus gorbuscha Walbaum) and chum salmon (Onchorhynchus keta Walbaum) returns, some commercial fishing effort will be directed towards these fisheries.

The majority of the commercial fishing fleet and fishing activity takes place within Chignik Lagoon. Approximately 20 of the 102 registered commercial salmon fishing vessels direct their effort to the outside cape area of the Chignik Management Area. During June and July the cape fisheries of major importance are the Aniakchak, Kilokak Rocks and Hook Bay areas located in the Central and Eastern Districts. From mid July through August the Western and Perryville Districts are opened to allow the harvest of migrating pink, chum and sockeye salmon. The major cape fisheries located in these districts are the Cape Iteki, Mitrofanina Island, Castle Cape and Kupreanof Point areas.

There are ninety designated salmon streams within the Chignik Management Area. The most important of these is the Chignik Lakes system which is composed of two large interconnected lakes, Black Lake and Chignik Lake. There are two major salmon stocks in the Chignik system. The stocks spawn in different areas of the system and have a different time of spawning migration, length of freshwater residence as juveniles, and age at maturity (Higgins 1934 and Narver 1963). Adults from the (early run) Black Lake stock return primarily in June and spawn in the tributaries to Black Lake. Adults from the Chignik Lake stock (late run) return from late June until late September with a peak usually occurring during the third week in July. The Chignik Lake stock spawns in the tributaries to Chignik Lake, Chignik Lake beach areas and Black Lake tributaries.

The average total return prior to the early 1970's was less than 1 million per year. Due to research conducted in the early 1960's and the subsequent establishment of escapement goals to Black Lake of 400,000 and to Chignik Lake of 250,000 the average total return increased to 1.75 million between 1968-1977 and 2.61 million from 1978 to 1987.

### Sockeye Salmon

As previously introduced, the Chignik sockeye salmon run is composed of two major salmon stocks. These stocks have been given the names Black Lake run (early run) and the Chignik Lake run (late run). The names are derived from the primary areas the fish rear in as fry and the run timing as they enter the fishery.

The Black Lake stock is composed of primarily aged 1.3 adults. Percent age composition of the other contributing age classes (1.2, 2.3, etc.) vary from year to year. The Black Lake run will start appearing in Chignik Lagoon from the end of May to the first part of June, peak around 20 June and terminate, depending on run strength, in mid July.

The Chignik Lake stock is characterized by predominantly age class 2.3 adults with other contributing age classes varying in percent contribution from year to year. In comparison to the Black Lake run, the Chignik Lake run's timing encompasses a broader period of time. This run will start appearing in the fishery in late June, peak during the latter part of July and continue through September.

Migration patterns of returning adults for both stocks follow similar patterns but vary from year to year. Both stocks migrate through two areas of interception from non-Chignik commercial fishermen. The area located east of the Chignik Management Area, Cape Igvak, is fished by the Kodiak purse seine fleet and is allowed by the current Cape Igvak management plan to

harvest through 25 July, 15% of the total Chignik sockeye catch. The Balboa-Stepovak Area which is located west of the Chignik Area and is fished by the Peninsula set net and purse seine commercial fishing fleet. Under the Southeastern District Salmon Management Plan, this fleet is allowed to harvest through 25 July, 6.2% of the total Chignik sockeye catch.

### Pink Salmon

Pink salmon production in the Chignik Management Area is very sporadic from year to year. This erratic production is directly related to the morphology of the river and stream systems of the Chignik Area. The pink salmon systems east of Chignik Lagoon are characterized by loose substrate, steep gradient and short overall stream length. These systems are directly affected by flooding during the fall, winter and spring months which results in severe scouring causing high mortality of pink fry and eggs. The systems west of Chignik Lagoon are characterized by stream conditions similar to the Eastern Area but with few major producing systems that are large and stable.

Currently, all fish processed in the Chignik Area are for the fresh frozen market. The fresh frozen market requires bright fish of high quality and no water coloring. This has made management of pink salmon stocks very difficult. It was the policy in prior years of pink salmon management to allow the pinks to reach their terminal area, assure the escapement and harvest the surplus. During this time, fish and product quality were not a major consideration as the predominant use of these fish was for the canning markets. To provide a high quality product, assure the escapement and still harvest the surplus, the fish have to be intercepted enroute to the spawning grounds or as soon as they reach the terminal areas. In order to accomplish this, a great deal of time is spent conducting aerial surveys which allows the management biologist to keep abreast of the progressing pink salmon run. This method of run assessment is necessary to keep the management biologist up to date on each

system's escapements and allow the efficient harvest of surplus fish in the best marketable condition.

### Chum Salmon

The chum salmon run in the Chignik Area is similar to that of the pink run in that it mirrors the highs and lows of the overall return. In direct comparison the overall number of chum salmon produced is much less than that of pink salmon.

Chum salmon producing systems are located throughout the Chignik Management Area. However, only a few systems are considered significant producers for the commercial market. Systems of commercial importance are as follows: 1) The Ivanof River (Ivanof Bay Section) produces both an early (July) and a late (late August-September) chum run. 2) Ivan River (Mitrofanina Section) chum salmon will appear early (July) but extends into August. 3) Portage Bay (Dorner Bay Section) is a major producer of chum and pink salmon. In the Portage Bay Area where chum and pink salmon are mixed, management is directed towards the chum salmon return. Due to the great depth of the Portage Bay Area chums will not be observed until late July when they appear on the flats and along both sides of the upper bay area. These chum salmon stocks are likely to be decimated by illegal fishing due to the length of time the fish hold in the bay areas prior to moving into the creeks. 4) Aniakchak River (Big River Section) is an important producer of chums and even year pinks. These runs peak during late July. The Aniakchak has an unstable bottom which probably accounts for low returns from excellent escapements. Chum salmon spawn in the main river between Cape Horn and swift water opposite Pinnacle Mountain, North Fork, Mystery Creek, and Albert Johnson. 5) Chiginagak Bay (Chiginagak Section) has six salmon producing systems within the bay. The Chiginagak River at the head of the bay is primarily a chum producer and is managed as such. The remaining five systems are managed for pink salmon.

Chiginagak can be a difficult and complex bay to manage. The chums build up at the head of the bay until the entire run is essentially located in one spot. At this time very few fish have moved into the river and essentially no fish are migrating into the bay. At this time commercial fishing should not be allowed without good enforcement on the grounds to prevent fishing within the closed water areas.

The same problems associated with marketing water colored pink salmon are inherent with Chignik Area chum salmon. Processors want a fresh, bright product which has made the management of these species more difficult requiring constant analysis of catch performance and aerial surveys of the streams and surrounding areas to determine run strength and escapement. It is desirable when a strong run is anticipated to harvest the run early, prior to any large buildups in bays where fish quality would vary greatly.

#### Coho Salmon

Coho salmon start appearing in the commercial fishery during mid August. The major area of emphasis is the Chignik Lagoon Area. A few areas outside of Chignik Lagoon (Yantarni, Aniakchak, Amber Bay, and North Fork) produce good returns of coho and provide for a short commercial fishery. In comparison to other coho producing systems of the Westward Region, the Chignik River system supports the largest coho harvests. Since 1976, commercial harvests in Chignik have ranged from a low of 17,429 in 1977 to a high of 300,384 in 1982 with an average harvest for this period of 109,071 coho salmon. Total production of the Chignik River system is unknown, primarily due to the length of time the Chignik coho run encompasses (mid August through November) and the associated costs to maintain and enumerate coho escapement.

#### Chinook Salmon



Chinook salmon production in the Chignik Area is limited to the Chignik River system. The Chignik River chinook salmon run is characterized as a late run since the majority of the fish enter the system after the first of July and catches peak around the end of July. Spawning takes place throughout the Chignik River with the majority of the spawning located from the weir downstream.

Adult chinook salmon enter the river, pass through the weir and hold in the lower reaches of Chignik Lake until mature, then migrate downstream and spawn. Spawning occurs from mid August through mid September. Chinook salmon fry rear in both Chignik River and Chignik Lake.

Chinook salmon production (total run) has varied from a low of 927 in 1974 to a high of 10,124 in 1984. Escapement figures for chinook salmon are considered conservative due to the difficulty in distinguishing chinook from sockeye salmon as they pass through the weir.

## INTRODUCTION

### Description of Area

The Chignik Management Area lies on the south side of the Alaska Peninsula between the Kodiak Area to the east and the Alaska Peninsula Area to the west. Kilokak Rocks is the eastern boundary and Kupreanof Point is the western boundary. The area is divided into five districts: the Eastern, Central, Chignik Bay, Western and Perryville districts (Figure 1). There are approximately ninety salmon streams within the area.

The area's most important river system, the Chignik River, drains two interconnected lakes, Black Lake and Chignik Lake. The Chignik River empties into Chignik Lagoon where most of the fishing effort within the Chignik Management Area is concentrated.

Salmon management and research are conducted from the Department's field station on the Chignik River. A 400 foot pile driven weir is constructed annually across the river for enumeration of sockeye salmon.

#### Economic Value of the 1987 Salmon Harvest

There were 102 registered vessels fishing the Chignik Management Area in 1987. The ex-vessel value of all salmon species caught within this area is estimated at \$26.5 million based on the average price per pound paid to the fishermen for each species of salmon. The estimated income per vessel is \$260,000. The total value of Chignik produced sockeye salmon to commercial fishermen from the Chignik<sup>1</sup>, Kodiak<sup>2</sup>, and Alaska Peninsula<sup>2</sup> management areas is estimated at \$33.1 million.

#### Overview of the 1987 Salmon Season

The Chignik River weir was operational on 27 May. Prior to a commercial opening within the Chignik Area, there needs to be a cumulative escapement count of 40,000 sockeye through the weir by 12 June with a good indication of a buildup within the lagoon. Inseason escapement goals are set for June and July in order to assure that the overall escapement goals of 400,000 for the Black Lake run and 250,000 for the Chignik Lake run are achieved.

The daily escapement through the weir on 9 June was 6,996 sockeye bringing the cumulative escapement to date to 36,041. Based on the escapement to date and a good showing of fish in the lagoon

---

<sup>1</sup>The sockeye salmon catch for the Chignik Management Area is 1,898,838

<sup>2</sup>The Cape Igvak catch of Chignik bound sockeye salmon is 343,402 and 190,930 for the Balboa-Stepovak areas. The Cape Igvak and Balboa-Stepovak figures represent 80% of the sockeye catches for those areas as it is estimated that roughly 80% of the sockeye caught in the Cape Igvak section and Balboa-Stepovak are destined for Chignik. As outlined in the management plans for these two areas those catches through 25 July are used to estimate the percent interception of Chignik bound salmon.

(estimated 70-100,000 based on the 6 June test fishery) the first commercial opening was announced for 4:00 P.M., 11 June for 24 hours. On 10 June the daily escapement increased to 41,314. Based on these increased escapements the first commercial opening was extended until further notice with a reduction in markers to Mensis Point. This initial fishery remained open until 6:00 P.M. 18 June, harvesting 530,043 sockeye.

The Chignik Management Area closed to commercial salmon fishing at 6:00 P.M. 18 June and remained closed until 8:00 P.M. 20 June in order to bring the sockeye escapement back within the escapement schedule. A cumulative escapement of 200,000 sockeye through the weir by 20 June is desired. At 10:00 A.M. on 20 June this was achieved so another opening was announced for 8:00 P.M. on 20 June. The fishery remained open until 6:00 P.M. 23 June when a closure was again necessary to ensure that the early run escapement goal of 400,000 sockeye would be achieved by the end of June. The harvest during this second opening was 237,904 sockeye. At 12:00 Noon on 26 June it was projected that the early run escapement goal of 400,000 for the month of June would be achieved so another commercial fishery was announced for 6:00 P.M. 27 June. This fishery remained open until 12:00 P.M. on 7 July at which time a closure was necessary in order to evaluate the strength of the late (Chignik Lake) run. The harvest during this period was 714,623 sockeye.

During the transition period (usually 15 June to 15 July) between the Black Lake and Chignik Lake sockeye salmon runs, scale samples collected from the commercial fishery and Black Lake were analyzed to determine the placement of the average time of entry curve (ATOE). The ATOE curve is used to determine the percent composition of each run throughout the commercial fishery, allowing a breakdown of each stock in the daily escapement. On 3 July the model was completed and the ATOE curve indicated that on 6-7 July, 50% of the fish entering the lagoon were late run.

Commercial fishing in the Chignik Area was opened at 2:00 P.M. on 10 July when it was projected that the late run escapement would be 40,000 and within the escapement schedule for the late run. This fishery remained open until 12:00 P.M. on 16 July. The harvest during this period was 175,946 sockeye. Analysis of scale samples taken in the lagoon between 3 July when the ATOE curve was set and 16 July indicated that the percentage late run indicated by the placement of the ATOE curve was not being achieved. Instead of the 50% transition occurring on 6-7 July, scale analysis indicated this took place on 15 July. The cumulative escapement adjusted for this scale analysis on 16 July was 58,044, approximately 20-30,000 short of the desired escapement for this date.

Escapements continued to lag until 20 July and then averaged 17-18,000 per day until 26 July when the cumulative late run escapement of 174,328 sockeye fell within the late run escapement schedule. The commercial fishery opened at 6:00 A.M. 26 July and remained open until 12:01 A.M. 29 July. The harvest during this period was 86,551 sockeye.

In order to achieve the escapement goal of 250,000 late run sockeye the Chignik Bay District remained closed until 12 August. Due to increasing escapements from 6-11 August (averaging over 5,000) and the projection of reaching the escapement goal of 250,000 late run sockeye a commercial opening was allowed 6:00 A.M. 12 August and closed at 9:00 P.M. 14 August. The harvest for this opening was 31,238 sockeye. In order to harvest the surplus sockeye while still allowing for the escapement of coho salmon within the Chignik River system, weekly commercial salmon fishing periods were allowed after 18 August and continued until the end of the commercial salmon season 31 October. During this period 105,451 sockeye were harvested.

Including the interception fisheries at Cape Igvak and Balboa/Stepovak the total Black Lake sockeye salmon run is

estimated at 2,541,085, with a commercial harvest for all areas totaling 1,951,794.

The total Chignik Lake sockeye salmon run is estimated at 695,828 with a commercial harvest of 486,376.

In conclusion, the overall return of sockeye to the Chignik Lakes system is 3,236,913. This is within the range forecast in 1987 of 2.4 to 3.8 million and is approximately 140,000 above the point estimate of 3.10 million. However the early run was stronger than forecast and the late run was weaker than forecast.

#### Pink and Chum Salmon

During the 1987 commercial salmon season pink and chum returns to the Chignik Area were generally very weak. The majority of the Western and Perryville Districts' streams received good escapement levels and produced the majority of the catch. The catches in the Western and Perryville Districts were limited due to many factors. The majority of the pink and chum return was later than normal. Also sockeye catches in the Chignik Bay District were good and the price paid for sockeye made many Chignik fishermen reluctant to travel to the outside areas to target on pink and chum stocks which receive a much lower price per pound. The Western and Perryville Districts were opened on a weekly basis starting 10 July to prevent a large buildup of pinks and chums within the inner bay areas in excess to escapement needs.

Due to the factors listed above along with others such as weather and run timing, this objective was not met. On 22 August an estimated 200,000 pinks and chums were schooled inside the markers of Ivanof Bay. Several other bays in the Western and Perryville Districts also had fish arriving in fair to good numbers. These areas were surveyed four times by ADF&G over a 5-6 day period and several commercial fishermen also surveyed the area on a frequent basis. The opinion held by the majority of surveyors was that most of the fish were dark and very colored

up. No processor could be found that was interested in buying any volume of these fish as they yield an inferior frozen product. To prevent the wastage of many of these fish the inside bay areas remained closed during the 25 August opening.

In the Central and Eastern Districts returns were lagging and many of the streams were dry or had very low water levels preventing the escapement from entering many of these streams until late in the season. This, coupled with a weak late run of sockeye to Chignik Lake, restricted the fishing time in these areas. Approximately 85% of the total Chignik Area catch of pink and chum salmon came from the Western and Perryville Districts.

In summary, the 1987 commercial pink and chum harvest was below average. The average pink catch for the past 10 years is 752,794 as compared to the 1987 harvest of 246,775. The average chum catch for the past 10 years was 194,629 as compared to the 1987 harvest of 127,261.

#### Coho Salmon

The 1987 coho harvest of 150,414 is the third largest on record. The bulk of this harvest came from the Chignik Bay (51%) and Western Districts (39%). Escapement monitoring in the Chignik Area is sporadic due to the timing of the run and logistics involved in monitoring the many systems within the area.

#### Chinook Salmon

The chinook harvest in 1987 was 2,651. The majority of this harvest came from the Chignik Bay District where chinook are caught incidental to the sockeye fishery. The Chignik River is the only major chinook producing stream within the Chignik Area. Escapements into this system in 1987 were 2,624 chinook. However no adjustment has been made in this escapement to reflect fish taken by sport or subsistence fishermen, or fish entering the river after the weir was removed 11 August.

FIGURE 1. THE CHIGNIK MANAGEMENT AREA

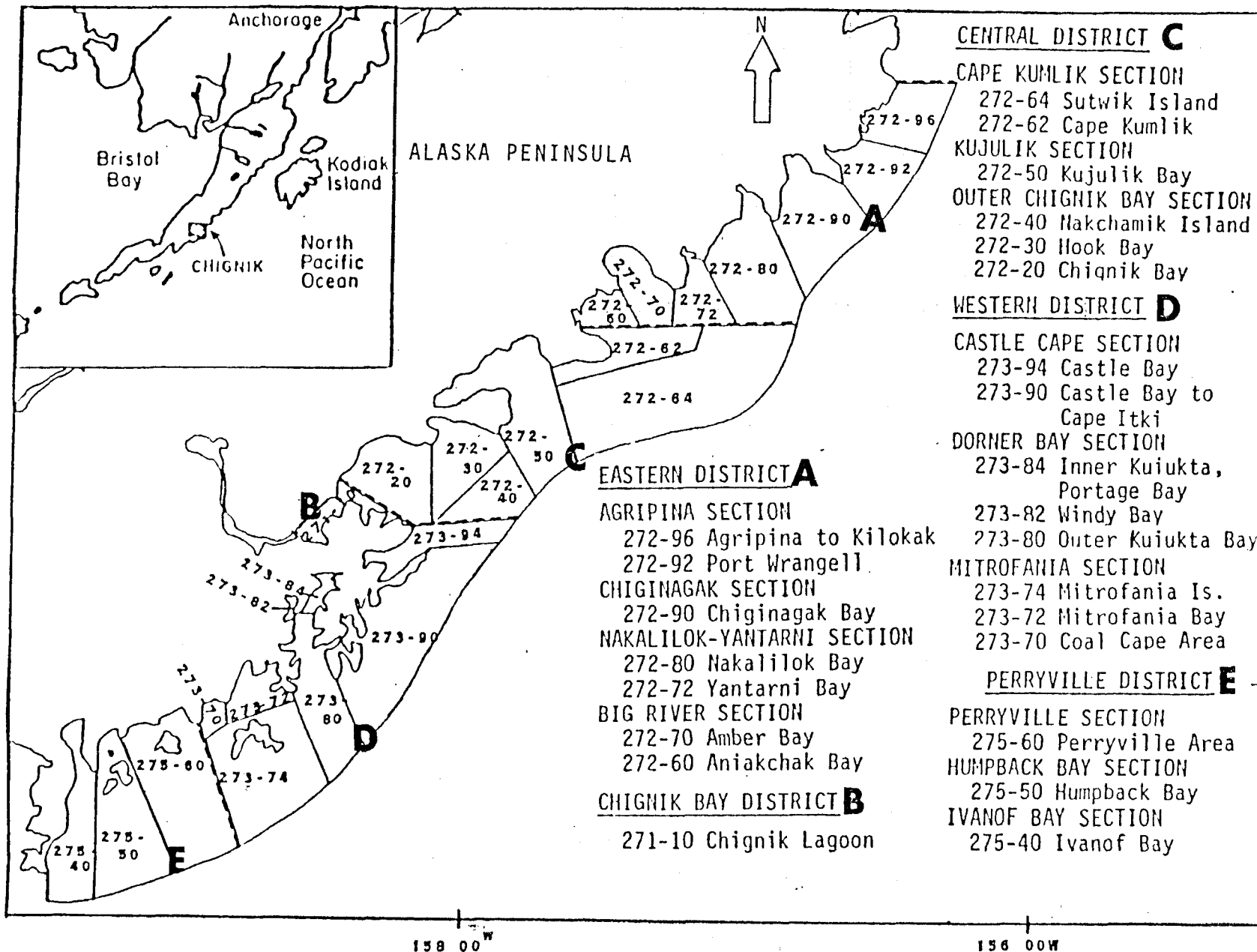


Table 1. Chignik management area commercial salmon harvest report, 1987.

DISTRICT	STAT. AREA	SPECIES					TOTAL
		CHINOOK	SOCKEYE	COHO	PINK	CHUM	
CHIGNIK BAY	271-10	1,931	1,559,757	77,333	13,887	5,163	1,658,071
	TOTAL	1,931	1,559,757	77,333	13,887	5,163	1,658,071
	272-20	0	3,156	0	205	0	3,361
CENTRAL	272-30	41	116,726	3,803	7,391	6,818	134,779
	272-40	2	14,519	0	0	49	14,570
	272-50	17	117,775	3	163	2,536	120,494
	272-62	0	2,942	0	10	34	2,986
	TOTAL	60	255,118	3,806	7,769	9,437	276,190
	272-60	0	14,218	0	0	12	14,230
EASTERN	272-70	0	102	0	0	509	611
	272-72	0	28	0	228	5,002	5,258
	272-80	0	2	2	258	1,759	2,021
	272-90	6	10	0	1,523	1,550	3,089
	272-92	0	138	5	70	58	271
	TOTAL	6	14,498	7	2,079	8,890	25,480
	273-72	1	666	0	33	78	778
WESTERN	273-74	451	17,190	29,306	69,925	18,641	135,513
	273-80	3	6,424	1,587	2,947	11,619	22,580
	273-84	0	36	55	1,744	13,135	14,970
	273-90	51	29,762	26,634	95,416	39,847	191,710
	273-94	6	2,446	1,106	17,636	3,578	24,772
	TOTAL	512	56,524	58,688	187,701	86,898	390,323
PERRYVILLE	275-40	115	9,133	8,404	15,902	12,573	46,127
	275-50	27	3,808	2,176	19,437	4,300	29,748
	TOTAL	142	12,941	10,580	35,339	16,873	75,875
TOTAL ALL DISTRICTS		2,651	1,898,838	150,414	246,775	127,261	2,425,939



Table 2. Catch and escapement<sup>1,2</sup> by district and section, 1987.

SECTION	CHINOOK	CHIGNIK BAY DISTRICT				CHUM	TOTAL
		SOCKEYE	COHO	PINK			
TOTAL CHIGNIK BAY DISTRICT							
CATCH	1,931	1,559,757	77,333	13,887	5,163	1,658,071	
ESCAPEMENT <sup>3</sup>	2,624	804,743	-	-	100	807,467	
TOTAL	4,555	2,364,500	77,333	13,887	5,263	2,465,538	

Table 2 (continued). Catch and escapement<sup>1,2</sup> by district and section, 1987.

SECTION	CHINOOK	CENTRAL DISTRICT			CHUM	TOTAL
		SOCKEYE	COHO	PINK		
OUTER CHIGNIK BAY						
CATCH	43	134,401	3,803	7,596	6,867	152,710
ESCAPEMENT	0	170	0	9,487	287	9,944
<hr/>						
TOTAL	43	134,571	3,803	17,083	7,154	162,654
KUJULIK						
CATCH	17	117,775	3	163	2,536	120,494
ESCAPEMENT	0	15	2,230	56,217	17,212	75,674
<hr/>						
TOTAL	17	117,790	2,233	56,380	19,748	196,168
CAPE KUMLIK						
CATCH	0	2,942	0	10	34	2,986
ESCAPEMENT	0	0	0	0	0	0
<hr/>						
TOTAL	0	2,942	0	10	34	2,986
TOTAL CENTRAL DISTRICT						
CATCH	60	255,118	3,806	7,769	9,437	276,190
ESCAPEMENT	0	185	2,230	65,704	17,499	85,618
<hr/>						
TOTAL	60	255,303	6,036	73,473	26,936	361,808

Table 2 (continued). Catch and escapement<sup>1,2</sup> by district and section, 1987.

SECTION	CHINOOK	EASTERN DISTRICT				TOTAL
		SOCKEYE	COHO	PINK	CHUM	
BIG RIVER						
CATCH	0	14,320	0	0	521	14,841
ESCAPEMENT	0	180	24,500	29,570	4,574	58,824
<hr/>						
TOTAL	0	14,500	24,500	29,570	5,095	73,665
NAKALILOK-YANTARNI						
CATCH	0	30	2	486	6,761	7,279
ESCAPEMENT	0	60	10,800	46,681	12,959	70,500
<hr/>						
TOTAL	0	90	10,802	47,167	19,720	77,779
CHIGINAGAK						
CATCH	6	10	0	1,523	1,550	3,089
ESCAPEMENT	0	1	0	103,166	19,669	122,836
<hr/>						
TOTAL	6	11	0	104,689	21,219	125,925
AGRIPINA						
CATCH	0	138	5	70	58	271
ESCAPEMENT	0	175	0	36,196	1,100	37,471
<hr/>						
TOTAL	0	313	5	36,266	1,158	37,742
TOTAL EASTERN DISTRICT						
CATCH	6	14,498	7	2,079	8,890	25,480
ESCAPEMENT	0	416	35,300	215,613	38,302	289,631
<hr/>						
TOTAL	6	14,914	35,307	217,692	47,192	315,111

Table 2 (continued). Catch and escapement<sup>1,2</sup> by district and section, 1987.

SECTION	CHINOOK	WESTERN DISTRICT			CHUM	TOTAL
		SOCKEYE	COHO	PINK		
MITROFANIA						
CATCH	452	17,856	29,306	69,958	18,719	136,291
ESCAPEMENT	0	1	0	30,643	2,842	33,486
TOTAL	452	17,857	29,306	100,601	21,561	169,777
DORNER BAY						
CATCH	3	6,460	1,642	4,691	24,754	37,550
ESCAPEMENT	0	0	0	7,607	16,822	24,429
TOTAL	3	6,460	1,642	12,298	41,576	61,979
CASTLE CAPE						
CATCH	57	32,208	27,740	113,052	43,425	216,482
ESCAPEMENT	0	0	0	0	0	0
TOTAL	57	32,208	27,740	113,052	43,425	216,482
TOTAL WESTERN DISTRICT						
CATCH	512	56,524	58,688	187,701	86,898	390,323
ESCAPEMENT	0	1	0	38,250	19,664	57,915
TOTAL	512	56,525	58,688	225,951	106,562	448,238

Table 2 (continued). Catch and escapement<sup>1,2</sup> by district and section, 1987.

SECTION	CHINOOK	PERRYVILLE DISTRICT			CHUM	TOTAL
		SOCKEYE	COHO	PINK		
IVANOFF BAY						
CATCH	115	9,133	8,404	15,902	12,573	46,127
ESCAPEMENT	0	0	0	42,043	8,726	50,769
TOTAL	115	9,133	8,404	57,945	21,299	96,896
HUMPBACK BAY						
CATCH	27	3,808	2,176	19,437	4,300	29,748
ESCAPEMENT	0	0	0	23,673	1,100	24,773
TOTAL	27	3,808	2,176	43,110	5,400	54,521
PERRYVILLE						
CATCH	0	0	0	0	0	0
ESCAPEMENT	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0
TOTAL PERRYVILLE DISTRICT						
CATCH	142	12,941	10,580	35,339	16,873	75,875
ESCAPEMENT	0	0	0	65,716	9,826	75,542
TOTAL	142	12,941	10,580	101,055	26,699	151,417

<sup>1</sup>Escapement estimates based on method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

<sup>2</sup>Coho escapement data incomplete due to run timing.

<sup>3</sup>Aerial surveys for pink, chum and coho escapement incomplete in the Chignik bay district.

Table 3. Catch and escapement<sup>1,2</sup> summary, 1987.

CHIGNIK BAY DISTRICT						
	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
CATCH	1,931	1,559,757	77,333	13,887	5,163	1,658,071
ESCAPEMENT <sup>3</sup>	2,624	804,743	-	-	100	807,467
TOTAL	4,555	2,364,500	77,333	13,887	5,263	2,465,538
CENTRAL DISTRICT						
CATCH	60	255,118	3,806	7,769	9,437	276,190
ESCAPEMENT	0	185	2,230	65,704	17,499	85,618
TOTAL	60	255,303	6,036	73,473	26,936	361,808
EASTERN DISTRICT						
CATCH	6	14,498	7	2,079	8,890	25,480
ESCAPEMENT	0	416	35,300	215,613	38,302	289,631
TOTAL	0	14,914	35,307	217,692	47,192	315,111
WESTERN DISTRICT						
CATCH	512	56,524	58,688	187,701	86,898	390,323
ESCAPEMENT	0	1	0	38,250	19,664	57,915
TOTAL	512	56,525	58,688	225,951	106,562	448,238
PERRYVILLE DISTRICT						
CATCH	142	12,941	10,580	35,339	16,873	75,875
ESCAPEMENT	0	0	0	65,716	9,826	75,542
TOTAL	142	12,941	10,580	101,055	26,699	151,417

Table 3 (continued). Catch and escapement<sup>1,2,3</sup> summary, 1987.

	TOTAL CHIGNIK AREA					
	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
CATCH	2,651	1,898,838	150,414	246,775	127,261	2,425,939
ESCAPEMENT	2,624	805,345	37,530	385,283	85,391	1,316,173
<hr/>						
TOTAL	5,275	2,703,483	187,944	632,058	212,652	3,742,112

<sup>1</sup>Escapement estimates based on method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

<sup>2</sup>Coho escapement data incomplete due to run timing.

<sup>3</sup>Aerial surveys for pink, chum and coho escapement incomplete in the Chignik Bay district.

Table 4. Chignik management area commercial salmon catch and effort by statistical area and week, 1987.

STAT. AREA	DATE	STAT. WEEK	FISHING EFFORT		CHINOOK		SCKEYEE		COHO		PINK		CHUM	
			PERMITS	LNDGS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS
271-10	06/06	23	1	1	0	0	679	2,770	0	0	0	0	0	0
	06/13	24	94	239	11	237	188,054	1,370,703	0	0	0	0	0	0
	06/20	25	92	407	16	444	284,700	2,094,402	0	0	0	0	0	0
	06/27	26	91	330	79	1,783	285,549	2,150,974	0	0	0	0	4	26
	07/04	27	91	551	371	8,344	351,541	2,644,789	0	0	3	12	75	524
	07/11	28	87	304	638	14,340	151,046	1,146,281	0	0	6	17	68	456
	07/18	29	82	278	677	14,896	113,134	850,320	2	15	131	400	195	1,505
	07/25	30	1	1	0	0	720	5,310	0	0	0	0	0	0
	08/01	31	79	189	53	1,059	59,408	421,766	276	1,998	1,441	5,067	876	6,664
	08/08	32	1	1	0	0	15	110	47	441	0	0	0	0
	08/15	33	67	144	40	754	29,335	186,660	486	3,261	3,832	14,602	1,180	8,998
	08/22	34	58	144	23	411	23,320	158,043	4,218	31,250	6,778	25,812	1,609	12,002
	08/29	35	45	134	14	382	28,510	190,162	15,447	121,643	1,167	4,137	735	5,337
	09/05	36	45	143	8	191	20,011	131,697	30,803	266,307	469	1,617	284	2,035
	09/12	37	41	111	1	7	14,114	91,601	19,067	168,014	58	185	91	601
	09/19	38	16	42	0	0	7,362	46,754	5,933	52,864	2	6	42	255
	09/26	39	10	13	0	0	2,559	15,855	1,054	8,847	0	0	4	26
TOTAL			99	3032	1,931	42,848	1,559,757	11,508,187	77,333	654,640	13,887	51,855	5,163	38,429
272-20	06/13	24	2	2	0	0	913	6,609	0	0	0	0	0	0
	06/20	25	3	3	0	0	1,630	12,012	0	0	0	0	0	0
	07/11	28	1	1	0	0	54	460	0	0	0	0	0	0
	08/01	31	1	1	0	0	559	3,240	0	0	205	810	0	0
TOTAL			7	7	0	0	3,156	22,321	0	0	205	810	0	0

-Continued-



Table 4 (continued). Chignik management area commercial salmon catch and effort by statistical area and week, 1987.

STAT. AREA	DATE	STAT. WEEK	FISHING EFFORT		CHINOOK		SOCKEYE		COHO		PINK		CHUM	
			PERMITS	LANDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS
272-30	06/13	24	9	14	1	31	6,385	47,352	0	0	0	0	2	23
	06/20	25	9	17	1	17	13,829	101,389	0	0	0	0	19	162
	06/27	26	12	26	2	48	24,663	186,300	0	0	0	0	834	6,283
	07/04	27	15	42	23	543	51,964	396,728	0	0	7	24	1,329	10,345
	07/11	28	16	34	1	25	8,696	67,431	0	0	13	43	392	2,866
	07/18	29	13	39	7	81	5,985	46,143	3	18	122	384	1,169	8,920
	08/01	31	2	2	2	19	570	4,062	14	102	277	932	44	324
	08/15	33	4	6	3	32	879	5,827	178	1,328	4,090	15,748	1,018	7,808
	08/22	34	6	10	1	23	867	5,926	571	4,530	2,258	8,750	1,245	9,173
	08/29	35	1	2	0	0	367	2,598	641	5,499	348	1,268	229	1,614
	09/05	36	2	4	0	0	2,003	14,665	1,868	16,845	276	985	359	2,615
	09/12	37	2	4	0	0	518	3,580	528	5,120	0	0	178	1,090
TOTAL			31	200	41	819	116,726	882,001	3,803	33,442	7,391	28,134	6,818	51,223
272-40	06/13	24	4	4	0	0	4,033	29,223	0	0	0	0	9	85
	06/20	25	7	12	2	40	10,371	73,440	0	0	0	0	37	328
	07/11	28	2	2	0	0	115	945	0	0	0	0	3	20
TOTAL			10	18	2	40	14,519	103,608	0	0	0	0	49	433
272-50	06/13	24	2	2	1	18	2,026	14,655	0	0	0	0	0	0
	06/20	25	11	29	5	119	22,161	157,601	0	0	0	0	26	208
	06/27	26	9	18	4	108	18,886	139,755	0	0	0	0	190	1,405
	07/04	27	11	43	6	155	67,970	507,450	0	0	163	497	2,024	14,400
	07/11	28	17	28	1	7	6,127	47,449	0	0	0	0	231	1,579
	07/18	29	4	7	0	0	605	4,382	3	20	0	0	65	444
TOTAL			21	127	17	407	117,775	871,292	3	20	163	497	2,536	18,036

-Continued-

Table 4 (continued). Chignik management area commercial salmon catch and effort by statistical area and week, 1987.

STAT. AREA	DATE	STAT. WEEK	FISHING EFFORT		CHINOOK		SCKEYE		COHO		PINK		CHUM	
			PERMITS	LNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS
272-60	06/13	24	3	5	0	0	2,251	16,185	0	0	0	0	0	0
	06/20	25	4	9	0	0	6,335	45,506	0	0	0	0	0	0
	06/27	26	2	2	0	0	2,801	21,695	0	0	0	0	4	30
	07/04	27	2	4	0	0	2,831	21,485	0	0	0	0	8	65
TOTAL			4	20	0	0	14,218	104,871	0	0	0	0	12	95
272-62	06/13	24	1	1	0	0	842	6,085	0	0	0	0	0	0
	06/27	26	2	2	0	0	962	6,999	0	0	3	10	9	76
	07/04	27	3	3	0	0	1,138	8,803	0	0	7	23	25	234
TOTAL			3	6	0	0	2,942	21,887	0	0	10	33	34	310
272-70	08/01	31	1	1	0	0	102	747	0	0	0	0	509	4,546
	TOTAL		1	1	0	0	102	747	0	0	0	0	509	4,546
272-72	08/01	31	3	3	0	0	28	163	0	0	228	754	5,002	42,156
	TOTAL		3	3	0	0	28	163	0	0	228	754	5,002	42,156
272-80	08/01	31	2	2	0	0	2	12	2	12	258	892	1,759	15,050
	TOTAL		2	2	0	0	2	12	2	12	258	892	1,759	15,050

-Continued-

Table 4 (continued). Chignik management area commercial salmon catch and effort by statistical area and week, 1987.

STAT. AREA	DATE	STAT. WEEK	FISHING EFFORT		CHINOOK		SOCKEYE		COHO		PINK		CHUM	
			PERMITS	LANDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS
272-90	08/01	31	3	3	6	132	10	64	0	0	1,523	5,135	1,550	12,840
TOTAL			3	3	6	132	10	64	0	0	1,523	5,135	1,550	12,840
272-92	07/18	29	1	1	0	0	138	956	5	38	70	212	58	427
TOTAL			1	1	0	0	138	956	5	38	70	212	58	427
273-72	07/18	29	1	1	1	20	666	5,101	0	0	33	72	78	610
TOTAL			1	1	1	20	666	5,101	0	0	33	72	78	610
273-74	07/11	28	3	4	58	338	1,463	9,581	437	2,647	925	2,926	574	3,987
	07/18	29	7	20	128	800	7,058	48,475	3,858	24,623	5,738	18,105	2,906	20,042
	08/01	31	15	34	249	1,615	5,838	39,800	19,031	130,160	34,989	123,813	9,730	67,624
	08/08	32	16	29	16	135	2,716	17,803	4,490	33,960	26,912	98,180	4,479	33,646
	08/29	35	4	5	0	0	105	667	1,490	12,211	1,361	4,622	952	6,468
TOTAL			26	92	451	2,888	17,190	116,326	29,306	203,601	69,925	247,646	18,641	131,767
273-80	07/18	29	5	7	3	103	5,681	45,447	11	77	218	724	497	4,021
	08/22	34	2	2	0	0	0	0	2	14	908	3,000	4,028	28,200
	08/29	35	7	9	0	0	508	3,378	1,049	8,645	1,781	6,829	6,934	49,850
	09/05	36	1	1	0	0	235	1,458	525	4,285	40	153	160	1,122
TOTAL			13	19	3	103	6,424	50,283	1,587	13,021	2,947	10,706	11,619	83,193

-Continued-

Table 4 (continued). Chignik management area commercial salmon catch and effort by statistical area and week, 1987.

STAT. AREA	DATE	STAT. WEEK	FISHING EFFORT		CHINOOK		SOCKEYE		COHO		PINK		CHUM	
			PERMITS	LNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS
273-84	08/22	34	6	6	0	0	36	222	47	325	1,563	6,120	12,038	92,174
	08/29	35	2	2	0	0	0	0	8	74	181	723	1,097	7,580
TOTAL			8	8	0	0	36	222	55	399	1,744	6,843	13,135	99,754
273-90	07/18	29	5	5	2	53	2,641	20,415	9	57	88	269	259	2,054
	08/01	31	19	34	35	347	13,318	90,548	11,804	82,531	35,448	124,702	11,458	84,278
	08/08	32	39	70	9	150	8,396	55,147	2,139	15,634	19,168	69,005	6,174	47,623
	08/15	33	11	25	3	30	495	3,300	1,822	13,264	18,739	69,262	7,869	56,616
	08/22	34	19	43	2	25	3,023	20,114	6,266	46,924	19,931	75,971	11,561	84,527
	08/29	35	8	13	0	0	1,316	9,082	3,963	31,260	1,929	6,602	2,227	16,790
	09/05	36	1	1	0	0	460	3,037	510	4,093	70	245	253	1,785
	09/12	37	1	1	0	0	113	733	121	1,066	43	128	46	369
TOTAL			54	192	51	605	29,762	202,376	26,634	194,829	95,416	346,184	39,847	294,042
273-94	08/01	31	1	1	0	0	44	305	48	374	126	419	60	417
	08/08	32	32	37	5	76	1,858	12,186	284	2,106	9,247	33,694	778	5,979
	08/15	33	13	24	1	20	514	3,298	739	5,250	8,056	30,949	2,670	19,739
	08/22	34	2	2	0	0	30	185	35	254	207	756	70	465
TOTAL			42	64	6	96	2,446	15,974	1,106	7,984	17,636	65,818	3,578	26,600
275-40	07/11	28	2	3	0	0	2,053	15,970	15	114	38	95	190	1,511
	07/18	29	1	3	0	0	1,509	11,816	2	11	0	0	2,528	18,108
	08/01	31	12	18	71	733	4,411	31,887	1,941	13,029	4,623	17,345	1,507	11,612
	08/08	32	8	11	44	397	1,146	7,825	320	2,770	6,025	24,430	1,827	13,961
	08/22	34	1	1	0	0	0	0	84	613	139	557	89	680

-Continued-

Table 4 (continued). Chignik management area commercial salmon catch and effort by statistical area and week, 1987.

STAT. AREA	DATE	STAT. WEEK	FISHING EFFORT		CHINOOK		SOCKEYE		COHO		PINK		CHUM	
			PERMITS	LANDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS	CATCH	POUNDS
275-40 (cont.)	08/29	35	5	9	0	0	12	75	3,138	23,246	5,045	19,753	5,678	40,811
	09/05	36	1	1	0	0	2	14	2,152	19,153	32	96	156	1,047
	09/12	37	1	1	0	0	0	0	752	6,758	0	0	598	4,080
TOTAL			23	47	115	1,130	9,133	67,587	8,404	65,694	15,902	62,276	12,573	91,810
275-50	08/01	31	7	9	27	394	2,530	18,671	1,555	11,264	3,870	14,261	1,673	12,807
	08/08	32	7	10	0	0	1,278	9,065	621	4,859	15,567	57,432	2,627	19,813
TOTAL			13	19	27	394	3,808	27,736	2,176	16,123	19,437	71,693	4,300	32,620
SEASON TOTAL			102	3,862	2,651	49,482	1,898,838	14,001,714	150,414	1,189,803	246,775	899,560	127,261	943,941

Table 5. Chignik management area salmon catches 1960-1987<sup>1</sup>.

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1960	643	715,969	8,933	557,327	486,699	1,769,571
1961	409	322,890	3,088	443,510	178,760	948,657
1962	435	364,753	1,292	1,519,305	364,335	2,250,120
1963	1,744	408,606	9,933	1,662,363	112,697	2,195,343
1964	1,099	560,703	2,735	1,682,365	333,336	2,580,238
1965	1,592	635,078	9,602	1,118,158	120,589	1,885,019
1966	636	224,615	16,050	683,215	238,883	1,163,399
1967	882	472,874	13,150	108,981	75,543	671,430
1968	674	878,449	2,200	1,290,660	223,861	2,395,844
1969	3,448	310,087	18,103	1,779,736	67,721	2,179,095
1970	1,225	1,327,664	15,348	1,287,605	464,674	3,096,516
1971	2,010	1,016,136	14,557	612,290	353,952	1,998,945
1972	464	378,669	19,615	72,240	78,356	549,344
1973	525	870,706	22,322	25,445	8,701	927,699
1974	255	662,905	12,245	70,017	34,454	779,876
1975	549	400,193	53,283	66,165	25,161	545,351
1976	763	1,135,572	35,301	388,917	80,221	1,640,774
1977	711	1,972,219	17,429	604,824	110,452	2,705,635
1978	1,603	1,576,283	20,212	985,114	120,889	2,704,101
1979	1,266	1,063,742	93,146	2,056,999	188,169	3,403,322
1980	2,325	846,356	117,862	1,125,465	312,572	2,404,580
1981	2,694	1,839,469	78,805	1,162,613	580,332	3,663,913
1982	5,236	1,521,857	300,384	873,390	390,096	3,090,963
1983	5,488	1,823,057	61,915	321,160	159,362	2,370,982
1984	4,318	2,662,449	110,128	446,184	63,408	3,286,487
1985	1,919	946,369	206,624	174,966	26,146	1,356,024
1986	3,037	1,645,834	116,633	647,125	176,640	2,589,269
1987	2,651	1,898,838	150,414	246,775	127,261	2,425,939
*avg(1960-1987)	1,736	1,017,227	54,690	786,176	196,545	2,056,373
*avg(1976-1987)	2,668	1,577,670	109,071	752,794	194,629	2,636,832

<sup>1</sup>Catch does not include Cape Igvak or Balboa-Stepovak catches.

Table 6. Chignik River chinook salmon escapement counts, 1987.

DATE	DAILY ESCAPEMENT	ACCUM. ESCAPEMENT	DATE	DAILY ESCAPEMENT	ACCUM. ESCAPEMENT
17-Jun	6	6	15-Jul	36	1,224
18-Jun	0	6	16-Jul	24	1,248
19-Jun	0	6	17-Jul	18	1,266
20-Jun	0	6	18-Jul	43	1,309
21-Jun	0	6	19-Jul	74	1,383
22-Jun	12	18	20-Jul	186	1,569
23-Jun	0	18	21-Jul	222	1,791
24-Jun	0	18	22-Jul	144	1,935
25-Jun	0	18	23-Jul	114	2,049
26-Jun	18	36	24-Jul	102	2,151
27-Jun	126	162	25-Jul	137	2,288
28-Jun	36	198	26-Jul	36	2,324
29-Jun	30	228	27-Jul	30	2,354
30-Jun	0	228	28-Jul	24	2,378
01-Jul	24	252	29-Jul	18	2,396
02-Jul	60	312	30-Jul	12	2,408
03-Jul	18	330	31-Jul	12	2,420
04-Jul	0	330	01-Aug	12	2,432
05-Jul	18	348	02-Aug	6	2,438
06-Jul	0	348	03-Aug	12	2,450
07-Jul	6	354	04-Aug	6	2,456
08-Jul	96	450	05-Aug	24	2,480
09-Jul	60	510	06-Aug	36	2,516
10-Jul	270	780	07-Aug	42	2,558
11-Jul	108	888	08-Aug	18	2,576
12-Jul	162	1,050	09-Aug	6	2,582
13-Jul	42	1,092	10-Aug	18	2,600
14-Jul	96	1,188	11-Aug	24	2,624

<sup>1</sup>Escapement estimates considered conservative due to the difficulty of distinguishing chinook from sockeye as they pass through the weir.

<sup>2</sup>No adjustment made for escapement after removal of the weir 11-Aug.

Table 7. Chignik River chinook salmon run, 1960-1987<sup>1</sup>.

YEAR	ESCAPEMENTS	CATCH	TOTAL RUN
1960	-	643	643
1961	-	409	409
1962	-	435	435
1963	564	1,744	2,308
1964	914	1,099	2,013
1965	942	1,592	2,534
1966	822	636	1,458
1967	1,500	882	2,382
1968	1,000	674	1,674
1969	600	3,448	4,048
1970	2,500	1,225	3,725
1971	2,000	2,010	4,010
1972	1,500	464	1,964
1973	822	525	1,347
1974	672	255	927
1975	877	549	1,426
1976	700	763	1,463
1977	798	711	1,509
1978	1,197	1,603	2,800
1979	1,050	1,266	2,316
1980	876	2,325	3,201
1981	1,603	2,694	4,297
1982	2,412	5,236	7,648
1983	1,943	5,488	7,431
1984	5,806	4,318	10,124
1985	3,144	1,919	5,063
1986	3,612	3,037	6,649
1987	2,624	2,651	5,275

<sup>1</sup>No estimate made for chinook escapement after removal of the weir.



Table 8. Daily sockeye salmon escapement estimates at Chignik Weir, 1987.

DATE	DAILY ESCAP.	ACCUM. ESCAP.	DATE	DAILY ESCAP.	ACCUM. ESCAP.	DATE	DAILY ESCAP.	ACCUM. ESCAP.	DATE	DAILY ESCAP.	ACCUM. ESCAP.
27-May	0	0	30-Jun	2,226	433,397	03-Aug	1,311	719,984	06-Sep	1,544	795,487
28-May	0	0	01-Jul	2,076	435,473	04-Aug	1,668	721,652	07-Sep	1,362	796,849
29-May	84	84	02-Jul	3,210	438,683	05-Aug	2,011	723,663	08-Sep	0	796,849
30-May	264	348	03-Jul	2,106	440,789	06-Aug	4,947	728,610	09-Sep	0	796,849
31-May	588	936	04-Jul	1,122	441,911	07-Aug	7,258	735,868	10-Sep	0	796,849
01-Jun	1,236	2,172	05-Jul	3,833	445,744	08-Aug	7,169	743,037	11-Sep	0	796,849
02-Jun	2,403	4,575	06-Jul	2,070	447,814	09-Aug	8,161	751,198	12-Sep	797	797,646
03-Jun	4,195	8,770	07-Jul	1,008	448,822	10-Aug	7,746	758,944	13-Sep	797	798,443
04-Jun	1,299	10,069	08-Jul	4,980	453,802	11-Aug	5,893	764,837	14-Sep	718	799,161
05-Jun	4,400	14,469	09-Jul	37,878	491,680	12-Aug	0 <sup>1</sup>	764,837	15-Sep	0	799,161
06-Jun	3,306	17,775	10-Jul	42,990	534,670	13-Aug	0	764,837	16-Sep	0	799,161
07-Jun	8,892	26,667	11-Jul	5,964	540,634	14-Aug	758	765,595	17-Sep	0	799,161
08-Jun	2,378	29,045	12-Jul	6,930	547,564	15-Aug	6,565	772,160	18-Sep	0	799,161
09-Jun	6,996	36,041	13-Jul	1,902	549,466	16-Aug	5,104	777,264	19-Sep	544	799,705
10-Jun	41,314	77,355	14-Jul	1,020	550,486	17-Aug	3,649	780,913	20-Sep	387	800,092
11-Jun	35,741	113,096	15-Jul	504	550,990	18-Aug	0	780,913	21-Sep	444	800,536
12-Jun	17,100	130,196	16-Jul	1,308	552,298	19-Aug	0	780,913	22-Sep	0	800,536
13-Jun	15,657	145,853	17-Jul	5,773	558,071	20-Aug	0	780,913	23-Sep	407	800,943
14-Jun	5,304	151,157	18-Jul	8,425	566,496	21-Aug	0	780,913	24-Sep	0	800,943
15-Jun	690	151,847	19-Jul	8,108	574,604	22-Aug	3,250	784,163	25-Sep	0	800,943
16-Jun	6,639	158,486	20-Jul	15,627	590,231	23-Aug	2,625	786,788	26-Sep	0	800,943
17-Jun	9,132	167,618	21-Jul	18,712	608,943	24-Aug	816	787,604	27-Sep	0	800,943
18-Jun	3,174	170,792	22-Jul	19,900	628,843	25-Aug	0	787,604	28-Sep	366	801,309
19-Jun	6,784	177,576	23-Jul	24,213	653,056	26-Aug	0	787,604	29-Sep	311	801,620
20-Jun	34,913	212,489	24-Jul	18,630	671,686	27-Aug	0	787,604	30-Sep	224	801,844
21-Jun	41,593	254,082	25-Jul	21,321	693,007	28-Aug	0	787,604	01-Oct	258	802,102
22-Jun	7,349	261,431	26-Jul	10,116	703,123	29-Aug	2,088	789,692	02-Oct	235	802,337
23-Jun	1,494	262,925	27-Jul	6,077	709,200	30-Aug	1,684	791,376	03-Oct	236	802,573

-Continued-

Table 8 (continued). Daily sockeye salmon escapement estimates at Chignik Weir, 1987.

DATE	DAILY ESCAP.	ACCUM. ESCAP.	DATE	DAILY ESCAP.	ACCUM. ESCAP.	DATE	DAILY ESCAP.	ACCUM. ESCAP.	DATE	DAILY ESCAP.	ACCUM. ESCAP.
24-Jun	13,800	276,725	28-Jul	1,178	710,378	31-Aug	1,169	792,545	04-Oct	214	802,787
25-Jun	29,010	305,735	29-Jul	1,087	711,465	01-Sep	0	792,545	05-Oct	253	803,040
26-Jun	55,401	361,136	30-Jul	1,427	712,892	02-Sep	0	792,545	06-Oct	267	803,307
27-Jun	59,232	420,368	31-Jul	2,433	715,325	03-Sep	0	792,545	07-Oct	234	803,541
28-Jun	6,348	426,716	01-Aug	1,665	716,990	04-Sep	0	792,545	08-Oct	202	803,743
29-Jun	4,455	431,171	02-Aug	1,683	718,673	05-Sep	1,398	793,943			

Escapement estimates after weir removal 11 Aug. were determined by B. Alan Johnson based on catch and escapement prior to weir removal and catches in the lagoon after weir removal.

Figure 2. Chignik Sockeye escapement.

# CHIGNIK SOCKEYE SALMON ESCAPEMENT

CHIGNIK LAKES SYSTEM 1987

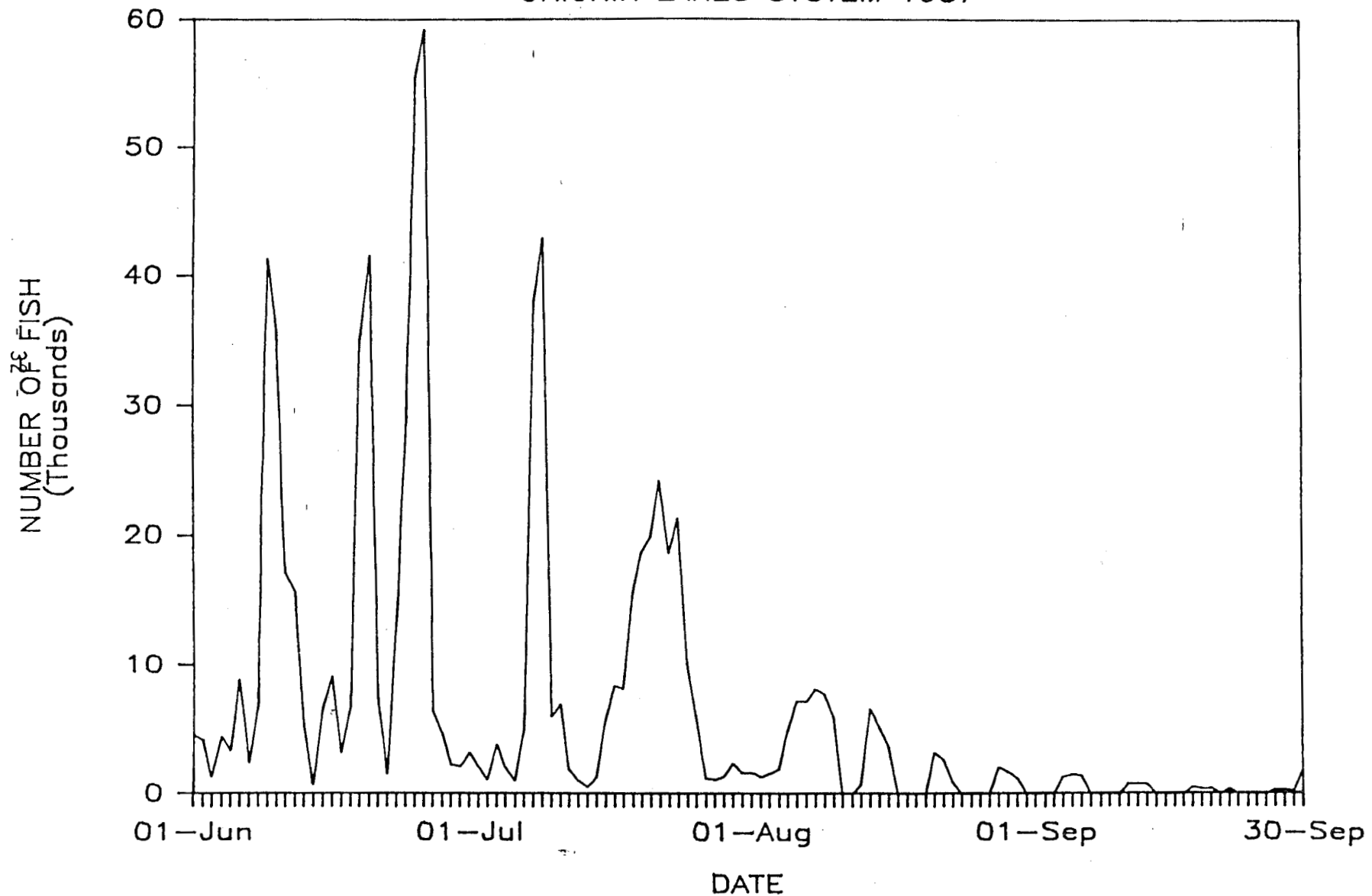


Table 9. Sockeye salmon catch and escapement in the Chignik Lakes system, 1987 (timing adjusted to Chignik Lagoon).

DATE	DAILY ESCAP. <sup>1</sup>	CHIGNIK LAGOON CATCH <sup>2</sup>	HOOK BAY KUJULIK CATCH	ANIAKCHAK/ CAPE KUMLIK CATCH	REMAINDER EASTERN DISTRICT CATCH	WESTERN DISTRICT CATCH	PERRYVILLE DISTRICT CATCH	TOTAL CHIGNIK CATCH	BALBOA STEPOVAK <sup>3</sup> CATCH	CAPE IGVAK <sup>3</sup> CATCH	TOTAL CATCH ALL AREAS
01-Jun	4,575	0	0	0	0	0	0	0	0	0	4,575
02-Jun	4,195	0	0	0	0	0	0	0	0	0	4,195
03-Jun	1,299	0	0	0	0	0	0	0	0	0	1,299
04-Jun	4,400	0	0	0	0	0	0	0	0	0	4,400
05-Jun	3,306	0	0	0	0	0	0	0	0	0	3,306
06-Jun	8,892	679	0	0	0	0	0	679	0	0	9,571
07-Jun	2,378	0	0	0	0	0	0	0	0	0	2,378
08-Jun	6,996	0	0	0	0	0	0	0	0	0	6,996
09-Jun	41,314	0	0	0	0	0	0	0	0	0	41,314
10-Jun	35,741	0	0	0	0	0	0	0	0	0	35,741
11-Jun	17,100	51,060	0	0	0	0	0	51,060	0	0	68,160
12-Jun	15,657	71,786	1,821	0	0	0	0	73,607	0	0	89,264
13-Jun	5,304	64,908	4,205	684	0	0	0	69,797	0	0	75,101
14-Jun	690	58,564	7,331	1,949	0	0	0	67,844	0	0	68,534
15-Jun	6,639	36,059	13,442	460	0	0	0	49,961	0	0	56,600
16-Jun	9,132	71,538	9,782	2,176	0	0	0	83,496	0	0	92,628
17-Jun	3,174	53,115	2,644	0	0	0	0	55,759	0	11,287	70,220
18-Jun	6,784	52,237	12,179	0	0	0	0	64,416	28,718	27,346	127,264
19-Jun	34,913	0	9,944	2,621	0	0	0	12,565	25,943	24,415	97,836
20-Jun	41,593	13,187	0	1,538	0	0	0	14,725	0	12,439	68,757
21-Jun	7,349	90,241	0	0	0	0	0	90,241	0	6,050	103,640
22-Jun	1,494	66,679	18,241	0	0	0	0	84,920	0	13,398	99,812
23-Jun	13,800	36,488	7,707	2,801	0	0	0	46,996	0	16,778	77,574
24-Jun	29,010	0	2,560	0	0	0	0	2,560	0	15,375	46,945
25-Jun	55,401	0	0	0	0	0	0	0	0	25,414	80,815
26-Jun	59,232	0	0	0	0	0	0	0	0	20,901	80,133

-Continued-

Table 9. (continued) Sockeye salmon catch and escapement in the Chignik Lakes system, 1987 (timing adjusted to Chignik Lagoon).

DATE	DAILY ESCAP. <sup>1</sup>	CHIGNIK LAGOON CATCH <sup>2</sup>	HOOK BAY KUJULIK CATCH	'ANIACHAK/ CAPE KUMLIK CATCH	REMAINDER		PERRYVILLE DISTRICT CATCH	TOTAL CHIGNIK CATCH	BALBOA STEPOVAK CATCH <sup>3</sup>	CAPE IGVAK CATCH <sup>3</sup>	TOTAL CATCH ALL AREAS
					EASTERN DISTRICT CATCH	WESTERN DISTRICT CATCH					
27-Jun	6,348	92,141	0	0	0	0	0	92,141	47,716	19,287	165,492
28-Jun	4,455	55,053	15,041	0	0	0	0	70,094	33,729	4,255	112,533
29-Jun	2,226	41,754	15,702	962	0	0	0	58,418	0	346	60,990
30-Jun	2,076	45,444	375	690	0	0	0	46,509	0	5,616	54,201
JUNE TOTAL	435,473	900,933	120,974	13,881	0	0	0	1,035,788	136,106	202,907	1,810,274
01-Jul	3,210	66,868	11,133	298	0	0	0	78,299	0	13,428	94,937
02-Jul	2,106	52,355	19,918	1,843	0	0	0	74,116	0	19,549	95,771
03-Jul	1,122	36,177	25,207	507	0	0	0	61,891	0	8,001	71,014
04-Jul	3,833	53,890	26,596	0	0	0	0	80,486	0	176	84,495
05-Jul	2,070	46,011	21,003	0	0	0	0	67,014	0	97	69,181
06-Jul	1,008	47,161	7,273	631	0	0	0	55,065	0	0	56,073
07-Jul	4,980	24,018	5,291	0	0	0	0	29,309	0	0	34,289
08-Jul	37,878	0	1,281	0	0	0	0	1,281	0	0	39,159
09-Jul	42,990	0	0	0	0	0	0	0	0	0	42,990
10-Jul	5,964	31,673	0	0	0	0	0	31,673	0	0	37,637
11-Jul	6,930	2,183	1,133	0	0	0	0	3,316	0	0	10,246
12-Jul	1,902	43,584	14	0	0	394	0	43,992	0	0	45,894
13-Jul	1,020	22,908	1,214	0	0	1,069	639	25,830	0	0	26,850
14-Jul	504	21,537	1,699	0	0	2,174	1,414	26,824	0	0	27,328
15-Jul	1,308	25,105	2,122	0	138	4,331	792	32,488	0	0	33,796
16-Jul	5,773	0	1,555	0	0	5,439	0	6,994	0	8,876	21,643
17-Jul	8,425	0	0	0	0	4,112	322	4,434	0	14,032	26,891
18-Jul	8,108	0	0	0	0	0	395	395	1,684	9,575	19,762

-Continued-

Table 9. (continued) Sockeye salmon catch and escapement in the Chignik Lakes system, 1987 (timing adjusted to Chignik Lagoon).

DATE	DAILY ESCAP. <sup>1</sup>	CHIGNIK LAGOON CATCH <sup>2</sup>	HOOK BAY KUJULIK CATCH	ANIAKCHAK/ CAPE KUMLIK CATCH	REMAINDER EASTERN DISTRICT CATCH	WESTERN DISTRICT CATCH	PERRYVILLE DISTRICT CATCH	TOTAL CHIGNIK CATCH	BALBOA STEPOVAK CATCH <sup>3</sup>	CAPE IGVAK CATCH <sup>3</sup>	TOTAL CATCH ALL AREAS
19-Jul	15,627	0	0	0	0	0	0	0	1,954	8,680	26,261
20-Jul	18,712	0	0	0	0	0	0	0	2,041	14,110	34,863
21-Jul	19,900	0	0	0	0	0	0	0	2,894	19,326	42,120
22-Jul	24,213	720	0	0	0	0	0	720	0	894	25,827
23-Jul	18,630	0	0	0	0	0	0	0	0	803	19,433
24-Jul	21,321	0	0	0	0	0	0	0	0	0	21,321
25-Jul	10,116	0	0	0	0	0	0	0	1,021	0	11,137
26-Jul	6,077	37,744	0	0	0	0	0	37,744	104	0	43,925
27-Jul	1,178	14,649	570	0	0	0	0	15,219	988	0	17,385
28-Jul	1,087	7,015	0	0	0	4,009	0	11,024	0	542	12,653
29-Jul	1,427	0	559	0	0	4,470	2,904	7,933	0	0	9,360
30-Jul	2,433	0	0	0	140	10,452	2,694	13,286	0	0	15,719
31-Jul	1,665	0	0	0	2	0	1,343	1,345	0	0	3,010
JULY TOTAL	716,990	1,434,531	247,542	17,160	280	36,450	10,503	1,746,466	146,792	320,996	2,931,244
01-Aug	1,683	0	0	0	0	0	0	0	7,774	0	9,457
02-Aug	1,311	0	0	0	0	0	0	0	6,235	11,418	18,964
03-Aug	1,668	0	0	0	0	269	0	269	0	6,262	8,199
04-Aug	2,011	0	0	0	0	3,341	0	3,341	0	2,027	7,379
05-Aug	4,947	0	0	0	0	8,309	975	9,284	0	0	14,231
06-Aug	7,258	0	0	0	0	1,320	1,425	2,745	0	32	10,035
07-Aug	7,169	0	0	0	0	0	24	24	0	552	7,745
08-Aug	8,161	15	0	0	0	0	0	15	2,279	1,760	12,215
09-Aug	7,746	14	0	0	0	0	0	14	6,534	278	14,572
10-Aug	5,893	0	0	0	0	0	0	0	4,102	0	9,995

-Continued-

Table 9. (continued) Sockeye salmon catch and escapement in the Chignik Lakes system, 1987 (timing adjusted to Chignik Lagoon).

DATE	DAILY ESCAP. <sup>1</sup>	CHIGNIK LAGOON CATCH <sup>2</sup>	HOOK BAY KUJULIK CATCH	'ANIACHAK/ CAPE KULIK CATCH	REMAINDER EASTERN DISTRICT CATCH	WESTERN DISTRICT CATCH	PERRYVILLE DISTRICT CATCH	TOTAL CHIGNIK CATCH	BALBOA STEPOVAK CATCH <sup>3</sup>	CAPE IGVAK CATCH <sup>3</sup>	TOTAL CATCH ALL AREAS
11-Aug	0	221	0	0	0	0	0	221	0	0	221
12-Aug	0	13,269	0	0	0	0	0	13,269	0	0	13,269
13-Aug	758	8,533	55	0	0	0	0	8,588	0	0	9,346
14-Aug	6,565	7,298	184	0	0	342	0	7,824	0	0	14,389
15-Aug	5,104	0	640	0	0	310	0	950	0	0	6,054
16-Aug	3,649	0	0	0	0	357	0	357	0	0	4,006
17-Aug	0	0	0	0	0	0	0	0	0	0	0
18-Aug	0	7,905	0	0	0	0	0	7,905	0	0	7,905
19-Aug	0	6,508	35	0	0	0	0	6,543	0	0	6,543
20-Aug	0	4,724	460	0	0	369	0	5,553	0	0	5,553
21-Aug	3,250	4,183	372	0	0	1,519	0	6,074	0	0	9,324
22-Aug	2,625	0	0	0	0	923	0	923	0	0	3,548
23-Aug	816	385	0	0	0	278	0	663	0	36	1,515
24-Aug	0	2,175	0	0	0	0	0	2,175	235	11	2,421
25-Aug	0	8,397	0	0	0	0	0	8,397	1,354	12	9,763
26-Aug	0	5,458	0	0	0	0	0	5,458	0	2	5,460
27-Aug	0	5,561	0	0	0	252	0	5,813	6	0	5,819
28-Aug	2,088	6,534	172	0	0	842	10	7,558	0	0	9,646
29-Aug	1,683	0	195	0	0	474	0	669	0	0	2,352
30-Aug	1,169	0	0	0	0	342	0	342	0	0	1,511
31-Aug	0	0	0	0	0	19	1	20	0	0	20
-----											
AUGUST TOTAL	792,544	1,515,711	249,655	17,160	280	55,716	12,938	1,851,460	175,311	343,386	3,162,701
-----											
01-Sep	0	7,372	0	0	0	0	1	7,373	0	0	7,373
02-Sep	0	3,756	0	0	0	0	0	3,756	0	0	3,756

-Continued-

Table 9. (continued) Sockeye salmon catch and escapement in the Chignik Lakes system, 1987 (timing adjusted to Chignik Lagoon).

DATE	DAILY ESCAP. <sup>1</sup>	CHIGNIK LAGOON CATCH <sup>2</sup>	HOOK BAY KUJULIK CATCH	ANIAKCHAK/ CAPE KUMLIK CATCH	REMAINDER		PERRYVILLE DISTRICT CATCH	TOTAL CHIGNIK CATCH	BALBOA STEPOVAK CATCH <sup>3</sup>	CAPE IGVAK CATCH <sup>3</sup>	TOTAL CATCH ALL AREAS
					EASTERN DISTRICT CATCH	WESTERN DISTRICT CATCH					
03-Sep	0	2,726	840	0	0	0	0	3,566	0	0	3,566
04-Sep	1,398	6,157	0	0	0	0	0	6,157	0	0	7,555
05-Sep	1,544	0	1,163	0	0	460	2	1,625	0	0	3,169
06-Sep	1,362	0	0	0	0	235	0	235	0	0	1,597
07-Sep	0	0	0	0	0	0	0	0	0	0	0
08-Sep	0	5,519	0	0	0	0	0	5,519	0	16	5,535
09-Sep	0	3,426	0	0	0	0	0	3,426	0	0	3,426
10-Sep	0	2,538	340	0	0	0	0	2,878	1,178	0	4,056
11-Sep	797	2,631	0	0	0	113	0	2,744	1,380	0	4,921
12-Sep	797	0	178	0	0	0	0	178	2,037	0	3,012
13-Sep	718	0	0	0	0	0	0	0	1,173	0	1,891
14-Sep	0	0	0	0	0	0	0	0	1,482	0	1,482
15-Sep	0	3,100	0	0	0	0	0	3,100	2,095	0	5,195
16-Sep	0	1,950	0	0	0	0	0	1,950	132	0	2,082
17-Sep	0	1,330	0	0	0	0	0	1,330	0	0	1,330
18-Sep	544	982	0	0	0	0	0	982	0	0	1,526
19-Sep	387	0	0	0	0	0	0	0	606	0	993
20-Sep	444	0	0	0	0	0	0	0	733	0	1,177
21-Sep	0	0	0	0	0	0	0	0	1,054	0	1,054
22-Sep	407	949	0	0	0	0	0	949	0	0	1,356
23-Sep	0	0	0	0	0	0	0	0	2,134	0	2,134
24-Sep	0	959	0	0	0	0	0	959	0	0	959
25-Sep	0	651	0	0	0	0	0	651	0	0	651
26-Sep	0	0	0	0	0	0	0	0	0	0	0
27-Sep	366	0	0	0	0	0	0	0	0	0	366
28-Sep	311	0	0	0	0	0	0	0	785	0	3,220

-Continued-



Table 9. (continued) Sockeye salmon catch and escapement in the Chignik Lakes system, 1987 (timing adjusted to Chignik Lagoon).

DATE	DAILY ESCAP. <sup>1</sup>	CHIGNIK LAGOON CATCH <sup>2</sup>	HOOK BAY KUJULIK CATCH	ANIACHAK/ CAPE KUMLIK CATCH	REMAINDER EASTERN DISTRICT CATCH	WESTERN DISTRICT CATCH	PERRYVILLE DISTRICT CATCH	TOTAL CHIGNIK CATCH	BALBOA STEPOVAK CATCH <sup>3</sup>	CAPE IGVAK CATCH <sup>3</sup>	TOTAL CATCH ALL AREAS
29-Sep	224	0	0	0	0	0	0	0	10	0	10
30-Sep	1,900	0	0	0	0	0	0	0	820	0	820
SEPT. TOTAL	11,199	44,046	2,521	0	0	808	3	47,378	15,619	16	74,212
SEASON TOTAL	803,743	1,559,757	252,176	17,160	280	56,524	12,941	1,898,838	190,930	343,402	3,236,913

<sup>1</sup>Escapements prior to 1 June and after 30 Sept. are pooled on the respective dates.

<sup>2</sup>Chignik Lagoon catch includes catches made in the remainder of the Chignik Bay district

<sup>3</sup>Catch at Cape Igvak and Stepovak is for entire season not to July 25 only.

Table 10. Harvest of Chignik sockeye salmon from 1964-1987<sup>1</sup>

Year	Chignik Area		Cape Igvak		Balboa-Stepovak <sup>2</sup>		TOTAL CATCH
	Catch (thousands)	%	Catch (thousands)	%	Catch (thousands)	%	
1964 <sup>3</sup>	561	90.6	15	2.4	43	7.0	619
1965 <sup>3</sup>	635	90.5	11	1.6	56	8.0	702
1966 <sup>3</sup>	225	88.2	18	7.1	12	4.7	255
1967 <sup>3</sup>	473	91.7	23	4.5	20	3.9	516
1968 <sup>3</sup>	878	80.9	136	12.5	71	6.5	1,085
1969 <sup>3</sup>	310	74.7	98	23.6	7	1.7	415
1970 <sup>3</sup>	1,426	70.0	542	26.3	68	3.3	2,036
1971 <sup>3</sup>	1,016	77.0	253	19.2	51	3.9	1,320
1972 <sup>3</sup>	379	86.3	42	9.6	18	4.1	439
1964-72 catch and percentage figures are total for entire season. Catch figures and percentages after 1972 are only through July 23.							
1973 <sup>4</sup>	768	89.4	53	6.17	38	4.4	859
1974 <sup>4</sup>	517	73.1	122	17.26	68	9.6	707
1975 <sup>4</sup>	115	81.6	24	17.02	2	1.4	141
1976 <sup>4</sup>	760	82.3	118	12.77	46	5.0	924
1977 <sup>4</sup>	1,543	90.4	129	7.56	35	2.1	1,707
1978 <sup>56</sup>	1,452	85.4	227	13.35	22	1.3	1,701
1979 <sup>57</sup>	799	91.1	15	1.71	63	7.2	877
1980 <sup>57</sup>	662	91.3	1	0.14	42	6.6	725
1981 <sup>57</sup>	1,605	80.0	284	14.15	118	5.9	2,007
1982 <sup>57</sup>	1,251	83.9	172	11.54	68	4.6	1,491
1983 <sup>57</sup>	1,451	73.1	318	16.01	217	10.9	1,986
1984 <sup>57</sup>	2,476	74.5	464	13.95	383	11.6	3,325
1985 <sup>58</sup>	692	79.7	125	14.4	51	5.9	868
1986 <sup>58</sup>	1,456	82.6	188	10.67	118	6.7	1,762
1987 <sup>58</sup>	1,660	78.0	321	15.08	147	6.9	2,128

<sup>1</sup>The Cape Igvak and Balboa-Stepovak figures represent 80% of the total sockeye catches for those areas as it is estimated that roughly 80% of the sockeye caught in the Cape Igvak section and Balboa-Stepovak are destined for Chignik.

<sup>2</sup>Balboa-Stepovak includes Beaver Bay. This fishery is also referred to as the Southeastern District Mainland Fishery.

<sup>3</sup>Prior to 1973, Cape Igvak and Balboa-Stepovak fisheries were regulated by set weekly fishing periods in the regulation book, usually 5 days per week. The situation was sometimes modified due to poor escapements at Chignik.

-Continued-

---

<sup>4</sup>During 1973 through 1977 all three fisheries were managed on a day for day basis.

<sup>5</sup>Beginning with the 1978 season, the current Cape Igvak Fishery Management Plan still in effect today was implemented. The Cape Igvak fishery was allocated 15 percent of the total Chignik destined sockeye catch.

<sup>6</sup>During 1978, seining prior to July 11 was disallowed in Beaver, Balboa, and Stepovak Bays. The set gillnet fishery was allowed to fish 3 days per week through July 10 after which the fishery was managed on the basis of local stocks.

<sup>7</sup>During 1979-84, 5 days per week were allowed at Balboa-Stepovak (including Beaver Bay) with a ceiling of 60,000 estimated Chignik destined sockeye, prior to July 11. If the Chignik Area sockeye catch was 1,000,000 or more before July 11, the 60,000 ceiling was to be dropped.

<sup>8</sup>Beginning in 1985, Balboa-Stepovak was placed on an allocation of 6.2 percent of the total estimated Chignik sockeye catch through July 25. After July 25, Balboa-Stepovak is managed on a local stock basis.

# CHIGNIK MANAGEMENT AREA 1987

## COMMERCIAL SOCKEYE HARVEST

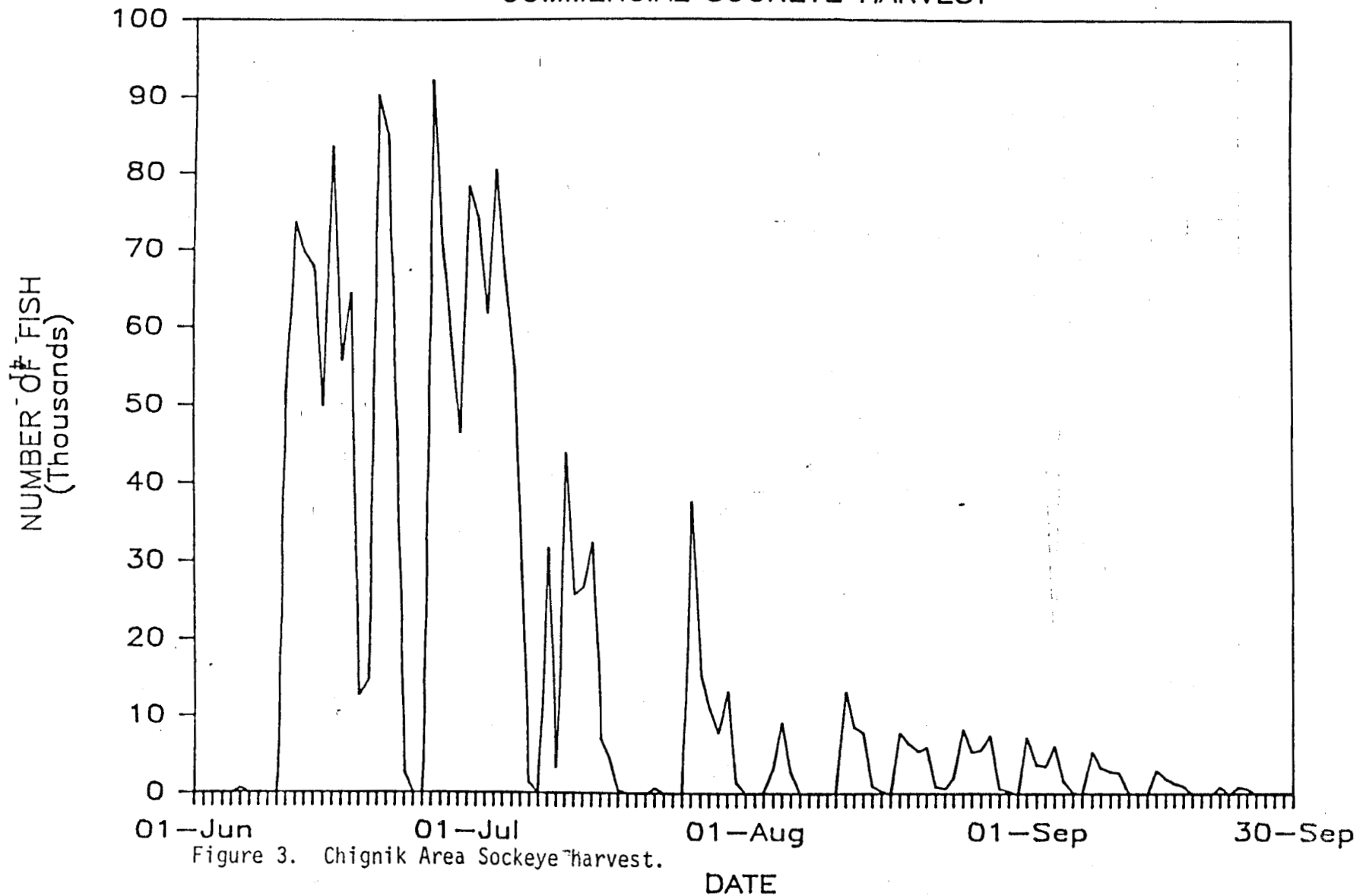


Figure 3. Chignik Area Sockeye Harvest.

# CHIGNIK LAGOON 1987

## COMMERCIAL SOCKEYE HARVEST

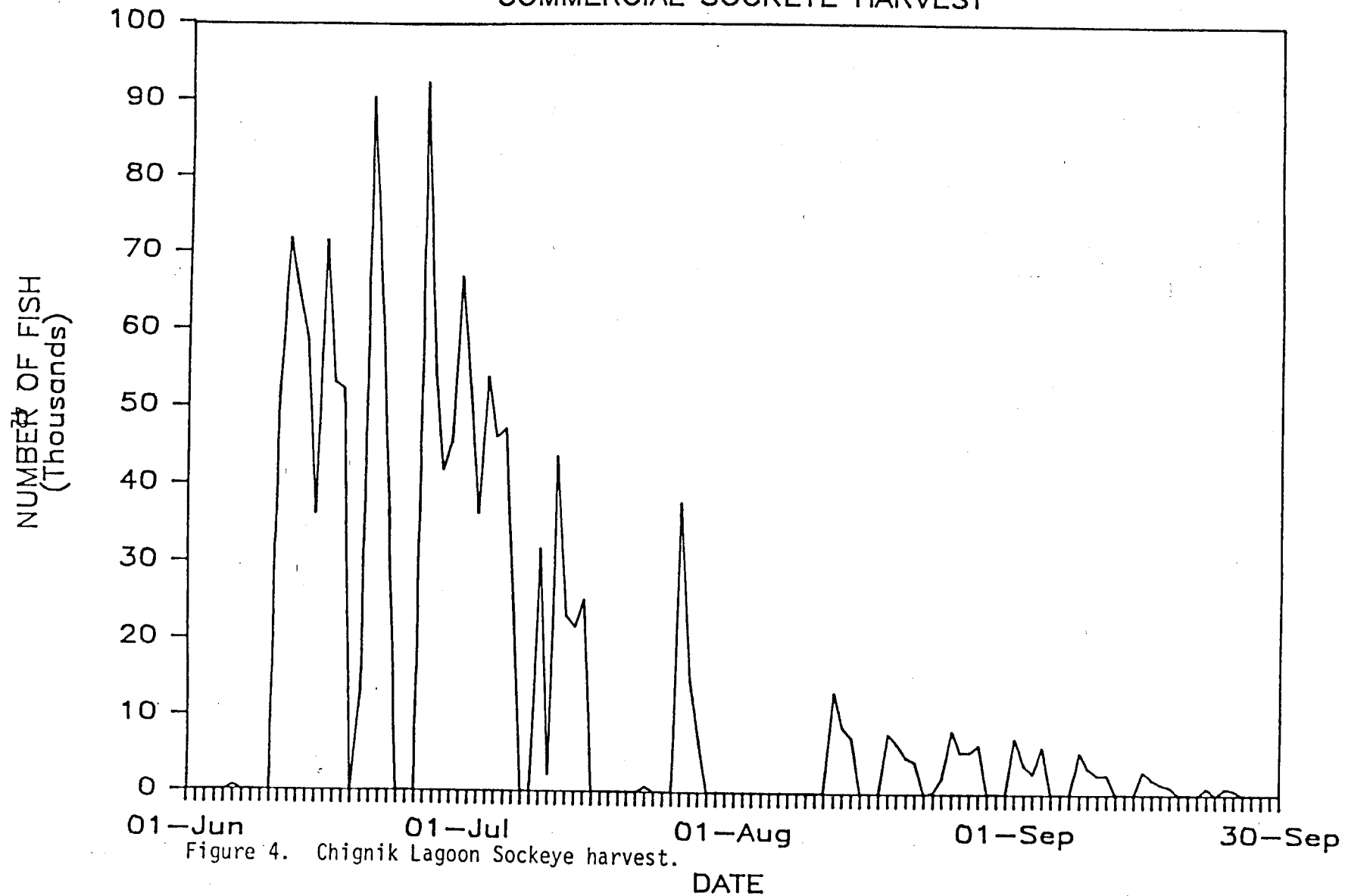


Figure 4. Chignik Lagoon Sockeye harvest.

# HOOK BAY AND KUJULIK BAY 1987

## COMMERCIAL SOCKEYE HARVEST

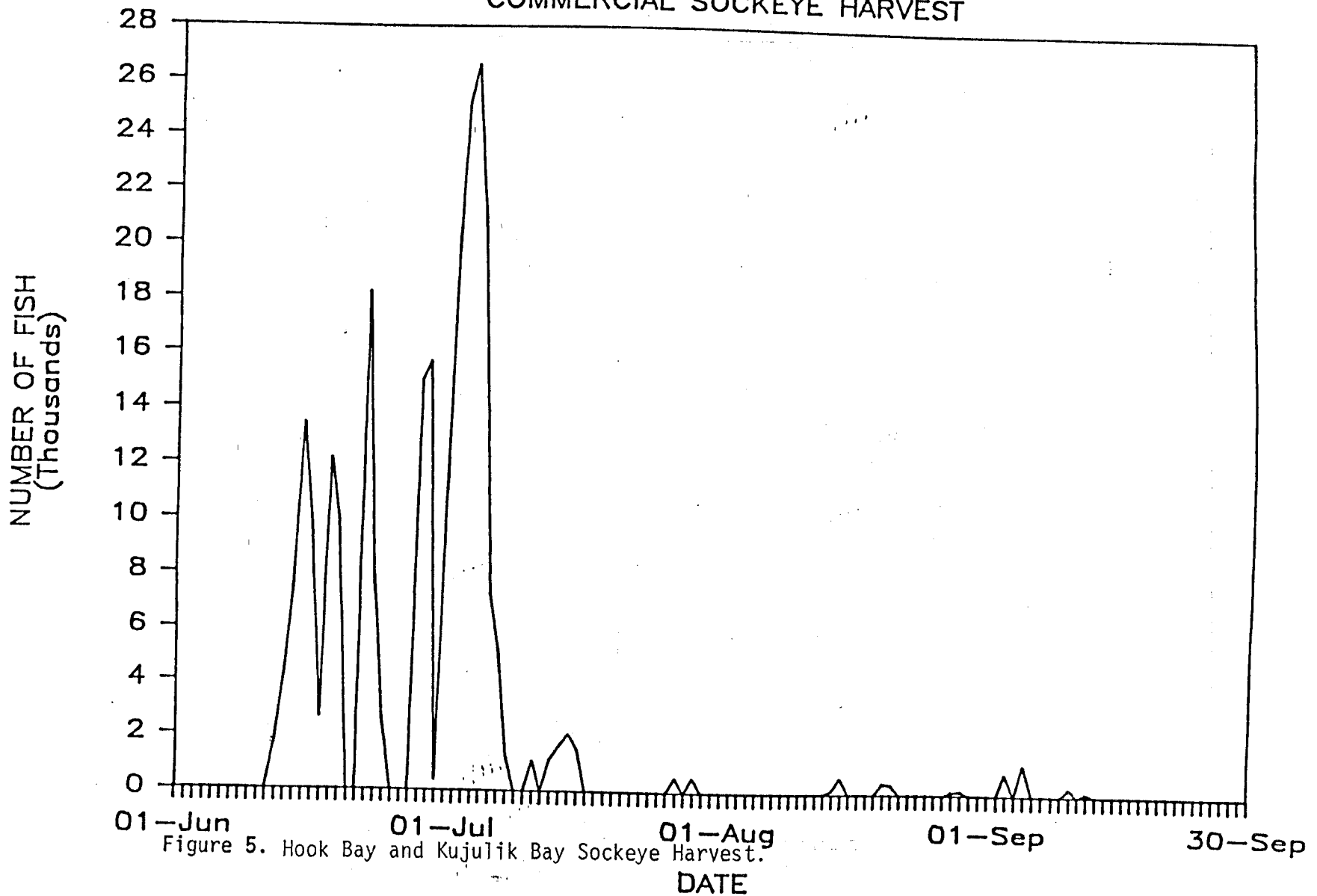


Figure 5. Hook Bay and Kujulik Bay Sockeye Harvest.

# ANIAKCHAK BAY 1987

## COMMERCIAL SOCKEYE HARVEST

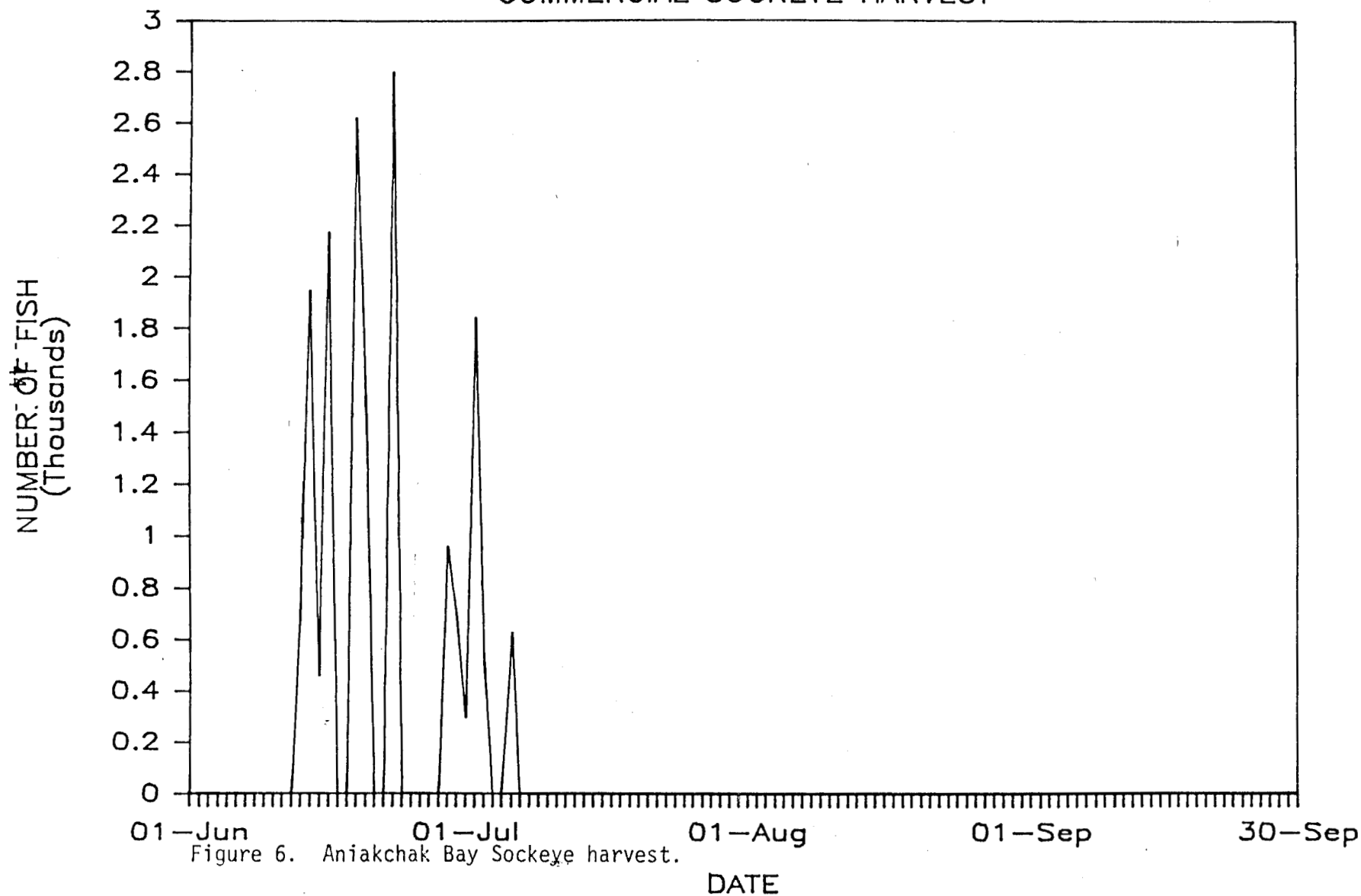
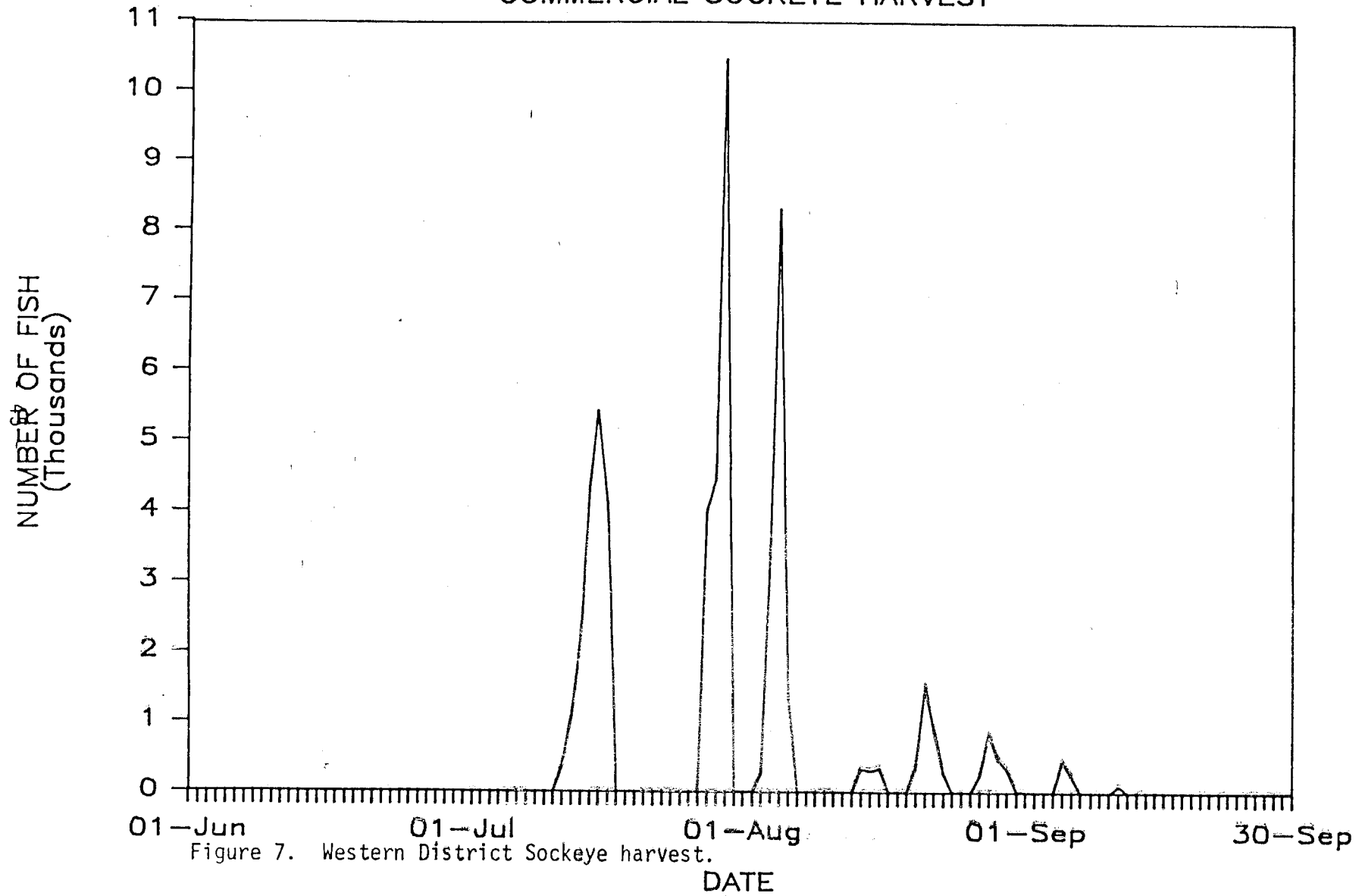


Figure 6. Aniakhak Bay Sockeye harvest.

# WESTERN DISTRICT 1987

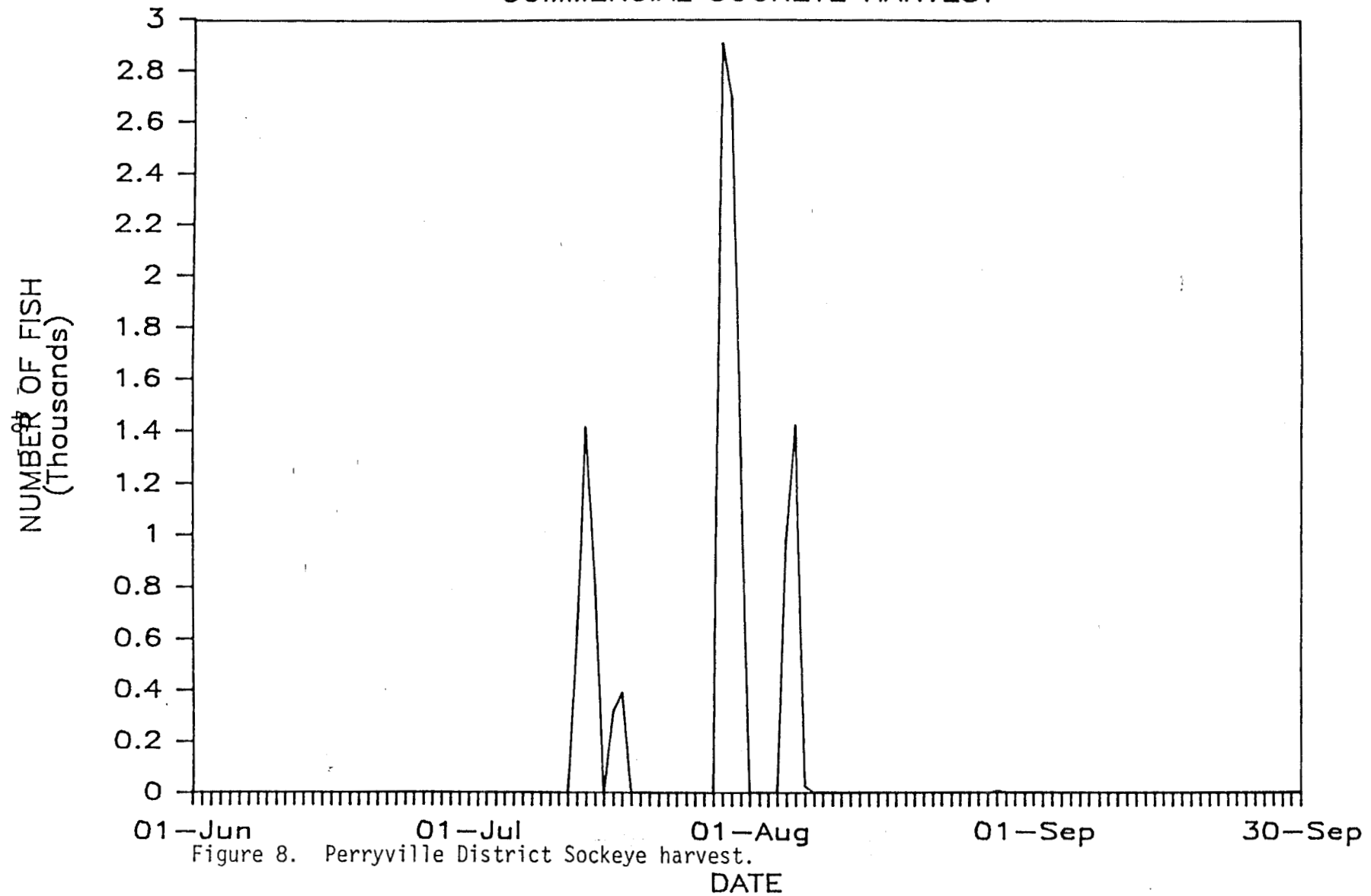
## COMMERCIAL SOCKEYE HARVEST





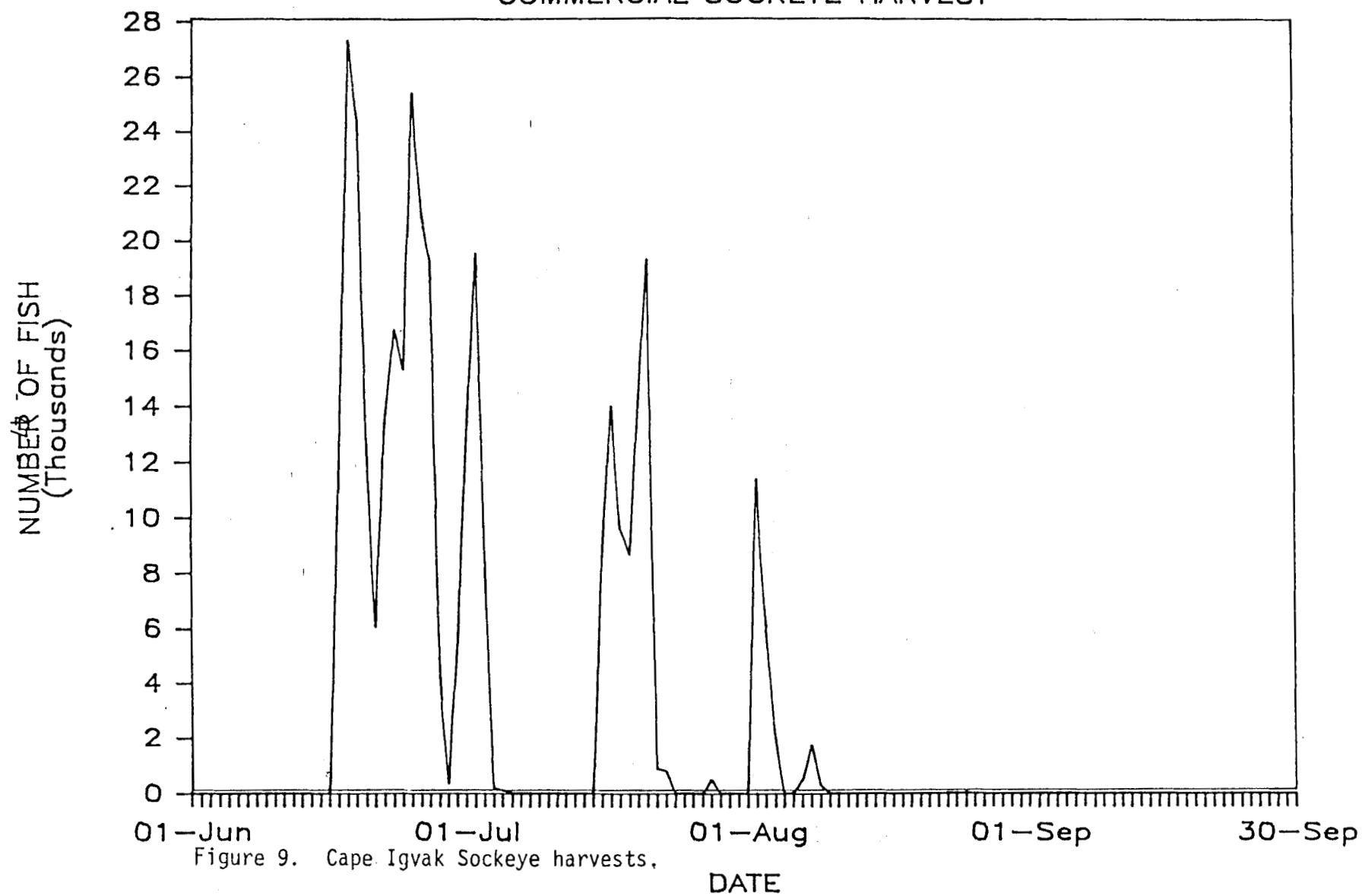
# PERRYVILLE DISTRICT 1987

## COMMERCIAL SOCKEYE HARVEST



# CAPE IGVAK 1987

## COMMERCIAL SOCKEYE HARVEST



# BALBOA--STEPOVAK 1987

COMMERCIAL SOCKEYE HARVEST

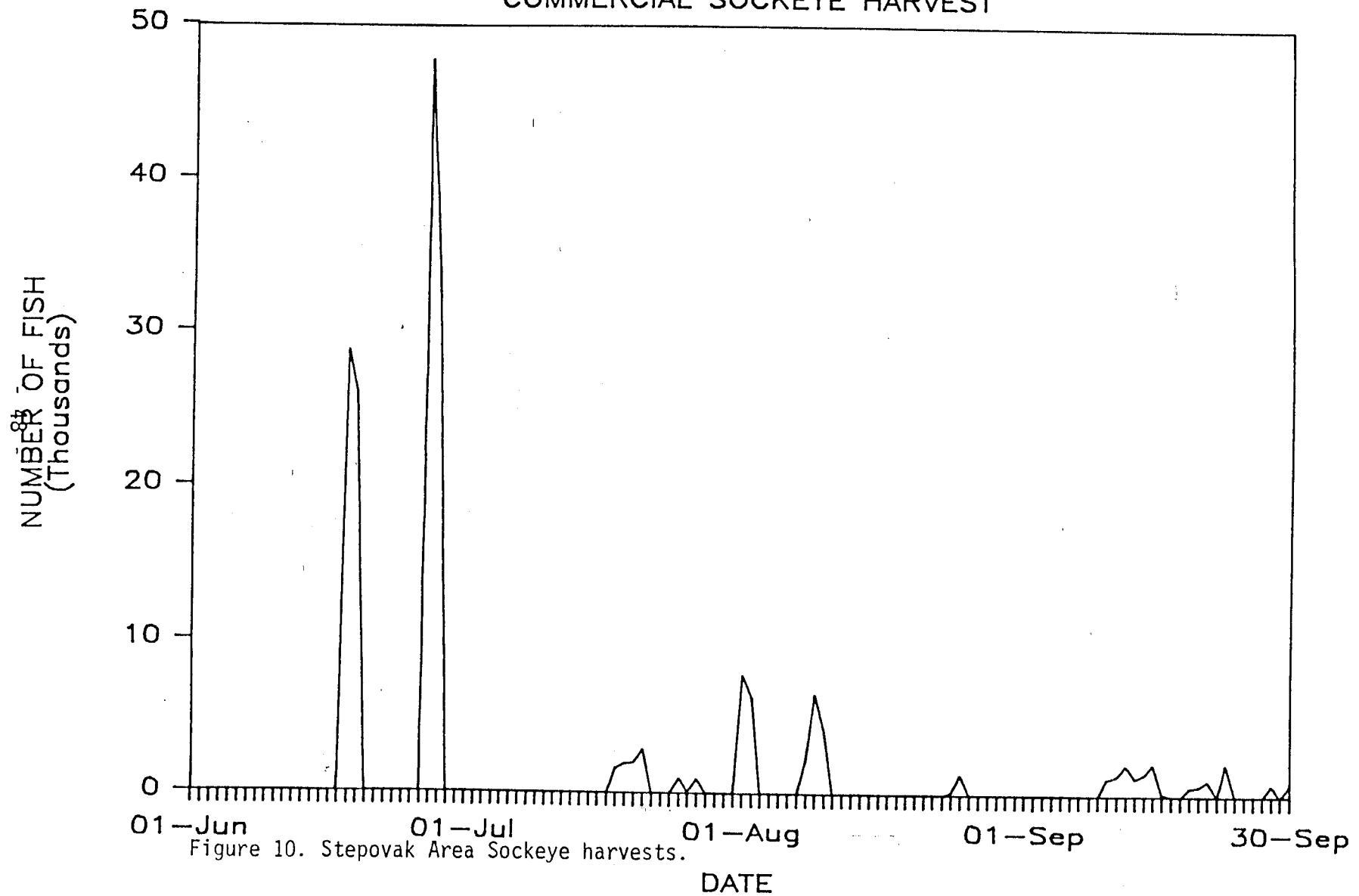


Table 11. Daily and cumulative return of sockeye salmon, Black Lake Stock, 1987 (adjusted to Chignik Lagoon date).

DATE	NUMBERS OF FISH			CUMULATIVE RETURN	CUMULATIVE PROPORTION
	ESCAPEMENT	CATCH	TOTAL		
01-Jun	4,523	0	4,523	4,523	0.002
02-Jun	4,140	0	4,140	8,663	0.003
03-Jun	1,279	0	1,279	9,942	0.004
04-Jun	4,322	0	4,322	14,264	0.006
05-Jun	3,240	0	3,240	17,504	0.007
06-Jun	8,697	664	9,361	26,865	0.011
07-Jun	2,312	0	2,312	29,177	0.011
08-Jun	6,763	0	6,763	35,940	0.014
09-Jun	39,710	0	39,710	75,650	0.030
10-Jun	34,162	0	34,162	109,812	0.043
11-Jun	16,254	48,534	64,788	174,600	0.069
12-Jun	14,801	69,586	84,387	258,987	0.102
13-Jun	5,014	65,971	70,985	329,972	0.130
14-Jun	652	64,120	64,772	394,744	0.155
15-Jun	6,275	47,219	53,494	448,238	0.176
16-Jun	8,633	78,928	87,561	535,799	0.211
17-Jun	2,987	63,094	66,081	601,880	0.237
18-Jun	6,356	112,885	119,241	721,121	0.284
19-Jun	32,574	58,710	91,284	812,405	0.320
20-Jun	38,651	25,240	63,891	876,296	0.345
21-Jun	6,803	89,126	95,929	972,225	0.383
22-Jun	1,379	90,661	92,040	1,064,265	0.419
23-Jun	12,774	59,025	71,799	1,136,064	0.447
24-Jun	26,949	16,662	43,611	1,179,675	0.464
25-Jun	51,656	23,695	75,351	1,255,026	0.494
26-Jun	55,428	19,559	74,987	1,330,013	0.523
27-Jun	5,963	149,473	155,436	1,485,449	0.585
28-Jun	4,199	101,882	106,081	1,591,530	0.626
29-Jun	2,088	55,142	57,230	1,648,760	0.649
30-Jun	1,941	48,735	50,676	1,699,436	0.669
01-Jul	2,994	85,535	88,529	1,787,965	0.704
02-Jul	1,961	87,199	89,160	1,877,125	0.739
03-Jul	1,047	65,217	66,264	1,943,389	0.765
04-Jul	3,584	75,396	78,980	2,022,369	0.796
05-Jul	1,937	62,794	64,731	2,087,100	0.821
06-Jul	944	51,544	52,488	2,139,588	0.842
07-Jul	4,534	26,687	31,221	2,170,809	0.854
08-Jul	33,522	1,135	34,657	2,205,466	0.868
09-Jul	36,948	0	36,948	2,242,414	0.882

-Continued-

Table 11. Daily and Cumulative Return of Sockeye Salmon, Black Lake Stock, 1987 (continued). (adjusted to Chignik Lagoon date)

DATE	NUMBERS OF FISH			CUMULATIVE RETURN	CUMULATIVE PROPORTION
	ESCAPEMENT	CATCH	TOTAL		
10-Jul	4,974	26,415	31,389	2,273,803	0.895
11-Jul	5,608	2,685	8,293	2,282,096	0.898
12-Jul	1,489	34,464	35,953	2,318,049	0.912
13-Jul	773	19,536	20,309	2,338,358	0.920
14-Jul	363	19,353	19,716	2,358,074	0.928
15-Jul	897	22,307	23,204	2,381,278	0.937
16-Jul	3,762	10,345	14,107	2,395,385	0.943
17-Jul	5,200	11,395	16,595	2,411,980	0.949
18-Jul	4,722	6,788	11,510	2,423,490	0.954
19-Jul	8,560	5,825	14,385	2,437,875	0.959
20-Jul	9,602	8,288	17,890	2,455,765	0.966
21-Jul	9,524	10,634	20,158	2,475,923	0.974
22-Jul	10,756	716	11,472	2,487,395	0.979
23-Jul	7,509	324	7,833	2,495,228	0.982
24-Jul	7,675	0	7,675	2,502,903	0.985
25-Jul	3,204	322	3,526	2,506,429	0.986
26-Jul	1,664	10,360	12,024	2,518,453	0.991
27-Jul	271	3,738	4,009	2,522,462	0.993
28-Jul	234	2,500	2,734	2,525,196	0.994
29-Jul	287	1,599	1,886	2,527,082	0.994
30-Jul	455	2,483	2,938	2,530,020	0.996
31-Jul	287	232	519	2,530,539	0.996
01-Aug	264	1,228	1,492	2,532,031	0.996
02-Aug	186	2,532	2,718	2,534,749	0.998
03-Aug	214	841	1,055	2,535,804	0.998
04-Aug	228	614	842	2,536,646	0.998
05-Aug	494	930	1,424	2,538,070	0.999
06-Aug	622	238	860	2,538,930	0.999
07-Aug	510	41	551	2,539,481	0.999
08-Aug	464	232	696	2,540,177	1.000
09-Aug	330	292	622	2,540,799	1.000
10-Aug	167	116	283	2,541,082	1.000
11-Aug	0	3	3	2,541,085	1.000
12-Aug	0	0	0	2,541,085	1.000
13-Aug	0	0	0	2,541,085	1.000
14-Aug	0	0	0	2,541,085	1.000
15-Aug	0	0	0	2,541,085	1.000
16-Aug	0	0	0	2,541,085	1.000

-Continued-

Table 11. Daily and Cumulative Return of Sockeye Salmon, Black Lake Stock, 1987 (continued). (adjusted to Chignik Lagoon date)

DATE	NUMBERS OF FISH			CUMULATIVE RETURN	CUMULATIVE PROPORTION
	ESCAPEMENT	CATCH	TOTAL		
17-Aug	0	0	0	2,541,085	1.000
18-Aug	0	0	0	2,541,085	1.000
19-Aug	0	0	0	2,541,085	1.000
20-Aug	0	0	0	2,541,085	1.000
21-Aug	0	0	0	2,541,085	1.000
22-Aug	0	0	0	2,541,085	1.000
23-Aug	0	0	0	2,541,085	1.000
24-Aug	0	0	0	2,541,085	1.000
25-Aug	0	0	0	2,541,085	1.000
26-Aug	0	0	0	2,541,085	1.000
27-Aug	0	0	0	2,541,085	1.000
28-Aug	0	0	0	2,541,085	1.000
29-Aug	0	0	0	2,541,085	1.000
30-Aug	0	0	0	2,541,085	1.000
31-Aug	0	0	0	2,541,085	1.000
01-Sep	0	0	0	2,541,085	1.000
02-Sep	0	0	0	2,541,085	1.000
03-Sep	0	0	0	2,541,085	1.000
04-Sep	0	0	0	2,541,085	1.000
05-Sep	0	0	0	2,541,085	1.000
06-Sep	0	0	0	2,541,085	1.000
07-Sep	0	0	0	2,541,085	1.000
08-Sep	0	0	0	2,541,085	1.000
09-Sep	0	0	0	2,541,085	1.000
10-Sep	0	0	0	2,541,085	1.000
11-Sep	0	0	0	2,541,085	1.000
12-Sep	0	0	0	2,541,085	1.000
13-Sep	0	0	0	2,541,085	1.000
14-Sep	0	0	0	2,541,085	1.000
15-Sep	0	0	0	2,541,085	1.000
16-Sep	0	0	0	2,541,085	1.000
17-Sep	0	0	0	2,541,085	1.000
18-Sep	0	0	0	2,541,085	1.000
19-Sep	0	0	0	2,541,085	1.000
20-Sep	0	0	0	2,541,085	1.000
21-Sep	0	0	0	2,541,085	1.000
22-Sep	0	0	0	2,541,085	1.000
23-Sep	0	0	0	2,541,085	1.000

-Continued-

Table 11. Daily and Cumulative Return of Sockeye Salmon, Black Lake Stock, 1987 (continued). (adjusted to Chignik Lagoon date)

DATE	NUMBERS OF FISH			CUMULATIVE RETURN	CUMULATIVE PROPORTION
	ESCAPEMENT	CATCH	TOTAL		
24-Sep	0	0	0	2,541,085	1.000
25-Sep	0	0	0	2,541,085	1.000
26-Sep	0	0	0	2,541,085	1.000
27-Sep	0	0	0	2,541,085	1.000
28-Sep	0	0	0	2,541,085	1.000
29-Sep	0	0	0	2,541,085	1.000
30-Sep	0	0	0	2,541,085	1.000
TOTALS	589,291	1,951,794	2,541,085		

Table 12. Daily and cumulative return of sockeye salmon, Chignik Lake stock, 1987 (adjusted to Chignik Lagoon date).

DATE	NUMBERS OF FISH			CUMULATIVE RETURN	CUMULATIVE PROPORTION
	ESCAPEMENT	CATCH	TOTAL		
01-Jun	52	0	52	52	0.000
02-Jun	55	0	55	107	0.000
03-Jun	20	0	20	127	0.000
04-Jun	78	0	78	205	0.000
05-Jun	66	0	66	271	0.000
06-Jun	195	15	210	481	0.001
07-Jun	66	0	66	547	0.001
08-Jun	233	0	233	780	0.001
09-Jun	1,604	0	1,604	2,384	0.003
10-Jun	1,579	0	1,579	3,963	0.006
11-Jun	846	2,526	3,372	7,335	0.011
12-Jun	856	4,021	4,877	12,212	0.018
13-Jun	290	3,826	4,116	16,328	0.023
14-Jun	38	3,724	3,762	20,090	0.029
15-Jun	364	2,742	3,106	23,195	0.033
16-Jun	499	4,568	5,067	28,262	0.041
17-Jun	187	3,952	4,139	32,402	0.047
18-Jun	428	7,595	8,023	40,425	0.058
19-Jun	2,339	4,213	6,552	46,977	0.068
20-Jun	2,942	1,924	4,866	51,843	0.075
21-Jun	546	7,165	7,711	59,554	0.086
22-Jun	115	7,657	7,772	67,326	0.097
23-Jun	1,026	4,749	5,775	73,101	0.105
24-Jun	2,061	1,273	3,334	76,435	0.110
25-Jun	3,745	1,719	5,464	81,899	0.118
26-Jun	3,804	1,342	5,146	87,045	0.125
27-Jun	385	9,671	10,056	97,101	0.140
28-Jun	256	6,196	6,452	103,553	0.149
29-Jun	138	3,622	3,760	107,313	0.154
30-Jun	135	3,390	3,525	110,838	0.159
01-Jul	216	6,192	6,408	117,246	0.168
02-Jul	145	6,466	6,611	123,857	0.178
03-Jul	75	4,675	4,750	128,607	0.185
04-Jul	249	5,266	5,515	134,122	0.193
05-Jul	133	4,317	4,450	138,572	0.199
06-Jul	64	3,521	3,585	142,157	0.204
07-Jul	446	2,622	3,068	145,225	0.209
08-Jul	4,356	146	4,502	149,727	0.215
09-Jul	6,042	0	6,042	155,769	0.224

-Continued-



Table 12 (continued). Daily and cumulative return of sockeye salmon, Chignik Lake stock, 1987 (adjusted to Chignik Lagoon date).

DATE	NUMBERS OF FISH			CUMULATIVE RETURN	CUMULATIVE PROPORTION
	ESCAPEMENT	CATCH	TOTAL		
10-Jul	990	5,258	6,248	162,017	0.233
11-Jul	1,322	631	1,953	163,970	0.236
12-Jul	413	9,528	9,941	173,911	0.250
13-Jul	247	6,294	6,541	180,452	0.259
14-Jul	141	7,471	7,612	188,064	0.270
15-Jul	411	10,181	10,592	198,656	0.285
16-Jul	2,011	5,525	7,536	206,192	0.296
17-Jul	3,225	7,071	10,296	216,488	0.311
18-Jul	3,386	4,866	8,252	224,740	0.323
19-Jul	7,067	4,809	11,876	236,616	0.340
20-Jul	9,110	7,863	16,973	253,589	0.364
21-Jul	10,376	11,586	21,962	275,551	0.396
22-Jul	13,457	898	14,355	289,906	0.417
23-Jul	11,121	479	11,600	301,506	0.433
24-Jul	13,646	0	13,646	315,152	0.453
25-Jul	6,912	699	7,611	322,763	0.464
26-Jul	4,413	27,488	31,901	354,664	0.510
27-Jul	907	12,469	13,376	368,040	0.529
28-Jul	853	9,066	9,919	377,959	0.543
29-Jul	1,140	6,334	7,474	385,433	0.554
30-Jul	1,978	10,803	12,781	398,214	0.572
31-Jul	1,378	1,113	2,491	400,705	0.576
01-Aug	1,419	6,546	7,965	408,670	0.587
02-Aug	1,125	15,121	16,246	424,916	0.611
03-Aug	1,454	5,690	7,144	432,060	0.621
04-Aug	1,783	4,754	6,537	438,597	0.630
05-Aug	4,453	8,354	12,807	451,404	0.649
06-Aug	6,636	2,539	9,175	460,579	0.662
07-Aug	6,659	535	7,194	467,773	0.672
08-Aug	7,697	3,822	11,519	479,292	0.689
09-Aug	7,416	6,534	13,950	493,242	0.709
10-Aug	5,726	3,986	9,712	502,954	0.723
11-Aug	0	218	218	503,172	0.723
12-Aug	0	13,269	13,269	516,441	0.742
13-Aug	758	8,588	9,346	525,787	0.756
14-Aug	6,565	7,824	14,389	540,176	0.776
15-Aug	5,104	950	6,054	546,230	0.785
16-Aug	3,649	357	4,006	550,236	0.791
17-Aug	0	0	0	550,236	0.791

-Continued-

Table 12 (continued). Daily and cumulative return of sockeye salmon, Chignik Lake stock, 1987 (adjusted to Chignik Lagoon date).

DATE	NUMBERS OF FISH			CUMULATIVE RETURN	CUMULATIVE PROPORTION
	ESCAPEMENT	CATCH	TOTAL		
18-Aug	0	7,905	7,905	558,141	0.802
19-Aug	0	6,543	6,543	564,684	0.812
20-Aug	0	5,553	5,553	570,237	0.820
21-Aug	3,250	6,074	9,324	579,561	0.833
22-Aug	2,625	923	3,548	583,109	0.838
23-Aug	816	699	1,515	584,624	0.840
24-Aug	0	2,421	2,421	587,045	0.844
25-Aug	0	9,763	9,763	596,808	0.858
26-Aug	0	5,460	5,460	602,268	0.866
27-Aug	0	5,819	5,819	608,087	0.874
28-Aug	2,088	7,558	9,646	617,733	0.888
29-Aug	1,683	669	2,352	620,085	0.891
30-Aug	1,169	342	1,511	621,596	0.893
31-Aug	0	20	20	621,616	0.893
01-Sep	0	7,373	7,373	628,989	0.904
02-Sep	0	3,756	3,756	632,745	0.909
03-Sep	0	3,566	3,566	636,311	0.914
04-Sep	1,398	6,157	7,555	643,866	0.925
05-Sep	1,544	1,625	3,169	647,035	0.930
06-Sep	1,362	235	1,597	648,632	0.932
07-Sep	0	0	0	648,632	0.932
08-Sep	0	5,535	5,535	654,167	0.940
09-Sep	0	3,426	3,426	657,593	0.945
10-Sep	0	4,056	4,056	661,649	0.951
11-Sep	797	4,124	4,921	666,570	0.958
12-Sep	797	2,215	3,012	669,582	0.962
13-Sep	718	1,173	1,891	671,473	0.965
14-Sep	0	1,482	1,482	672,955	0.967
15-Sep	0	5,195	5,195	678,150	0.975
16-Sep	0	2,082	2,082	680,232	0.978
17-Sep	0	1,330	1,330	681,562	0.979
18-Sep	544	982	1,526	683,088	0.982
19-Sep	387	606	993	684,081	0.983
20-Sep	444	733	1,177	685,258	0.985
21-Sep	0	1,054	1,054	686,312	0.986
22-Sep	407	949	1,356	687,668	0.988
23-Sep	0	2,134	2,134	689,802	0.991
24-Sep	0	959	959	690,761	0.993
25-Sep	0	651	651	691,412	0.994

-Continued-

Table 12 (continued). Daily and cumulative return of sockeye salmon, Chignik Lake stock, 1987 (adjusted to Chignik Lagoon date).

DATE	NUMBERS OF FISH			CUMULATIVE RETURN	CUMULATIVE PROPORTION
	ESCAPEMENT	CATCH	TOTAL		
26-Sep	0	0	0	691,412	0.994
27-Sep	366	0	366	691,778	0.994
28-Sep	2,435	785	3,220	694,998	0.999
29-Sep	0	10	10	695,008	0.999
30-Sep	0	820	820	695,828	1.000
TOTALS	214,452	481,376	695,828		

# 1987 CHIGNIK DAILY ABUNDANCE

By Stock

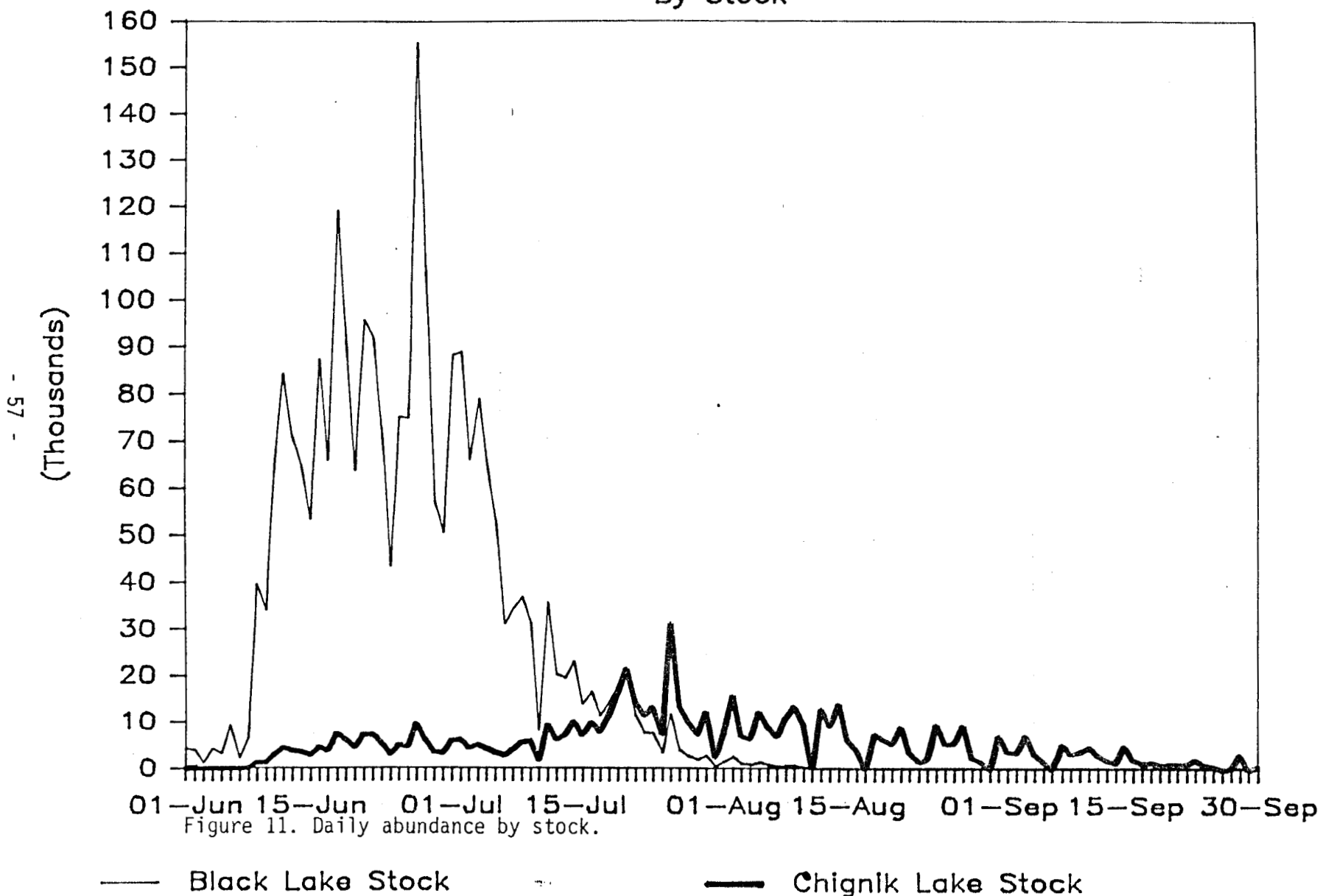


Table 13. Chignik sockeye salmon runs (1954-1987)<sup>1</sup>.

DATE	Black Lake Run			::	Chignik Lake Run			::	Total		
	Catch	Escapement	Total		Catch	Escapement	Total		Total Catch	Total Escap	Total Run
1954	52,000	170,000	222,000	::	11,298	281,675	292,973	::	63,298	451,675	514,973
1955	166,000	248,000	414,000	::	182,646	198,576	381,222	::	348,646	446,576	795,222
1956	186,000	266,000	452,000	::	482,522	491,099	973,621	::	668,522	757,099	1,425,621
1957	155,000	172,000	327,000	::	147,079	336,545	483,624	::	302,079	508,545	810,624
1958	139,000	108,000	247,000	::	186,322	213,127	399,449	::	325,322	321,127	646,449
1959	162,000	94,000	256,000	::	229,295	288,607	517,902	::	391,295	382,607	773,902
1960	274,048	251,567	525,615	::	418,357	357,229	775,586	::	692,405	608,796	1,301,201
1961	53,853	140,715	194,568	::	278,609	254,971	533,580	::	332,462	395,686	728,148
1962	71,562	167,603	239,165	::	292,527	324,861	617,388	::	364,089	492,464	856,553
1963	80,259	332,535	412,794	::	323,080	200,312	523,392	::	403,339	532,847	936,186
1964	128,950	137,072	266,022	::	427,940	166,624	594,564	::	556,890	303,696	860,586
1965	447,032	307,192	754,224	::	152,522	163,152	315,674	::	599,554	470,344	1,069,898
1966	76,696	383,546	460,242	::	143,099	183,526	326,625	::	219,795	567,072	786,867
1967	141,000	328,000	469,000	::	321,000	189,000	510,000	::	462,000	517,000	979,000
1968	447,800	342,343	790,143	::	529,582	244,836	774,418	::	977,382	587,179	1,564,561
1969	207,811	366,589	574,400	::	186,324	132,055	318,379	::	394,135	498,644	892,779
1970	1,594,025	536,257	2,130,282	::	259,897	119,952	379,849	::	1,853,922	656,209	2,510,131
1971	531,135	671,668	1,202,803	::	730,364	232,501	962,865	::	1,261,499	904,169	2,165,668
1972	41,001	326,320	367,321	::	375,255	231,270	606,525	::	416,256	557,590	973,846
1973	546,523	533,047	1,079,570	::	379,654	247,144	626,798	::	926,177	780,191	1,706,368
1974	162,024	351,701	513,725	::	624,568	364,612	989,180	::	786,592	716,313	1,502,905
1975	4,004	308,914	312,918	::	419,804	314,084	733,888	::	423,808	622,998	1,046,806
1976	516,714	551,254	1,067,968	::	733,798	341,828	1,075,626	::	1,250,512	893,082	2,143,594
1977	419,311	482,247	901,558	::	1,618,111	463,561	2,081,672	::	2,037,422	945,808	2,983,230
1978	1,067,944	458,660	1,526,604	::	753,109	263,009	1,016,118	::	1,821,053	721,669	2,542,722

-Continued-

Table 13 (continued). Chignik sockeye salmon runs (1954-1987)<sup>1</sup>.

DATE	Black Lake Run			::	Chignik Lake Run			::	Total		
	Catch	Escapement	Total		Catch	Escapement	Total		Total Catch	Total Escap	Total Run
1979	191,291	385,694	576,985	::	872,738	317,889	1,190,627	::	1,064,029	703,583	1,767,612
1980	154,760	311,332	466,092	::	705,655	279,729	985,384	::	860,415	591,061	1,451,476
1981	718,979	438,540	1,157,519	::	1,391,914	301,092	1,693,006	::	2,110,893	739,632	2,850,525
1982	1,251,205	616,117	1,867,322	::	425,659	305,193	730,852	::	1,676,864	921,310	2,598,174
1983	856,292	426,177	1,282,469	::	1,285,085	441,561	1,726,646	::	2,141,377	867,738	3,009,115
1984	2,621,304	597,712	3,219,016	::	505,363	268,496	773,859	::	3,126,667	866,208	3,992,875
1985	663,465	377,516	1,040,981	::	500,044	369,262	869,306	::	1,163,509	746,778	1,910,287
1986	1,372,187	566,088	1,938,275	::	609,081	207,231	816,312	::	1,981,268	773,319	2,754,587
1987	1,951,794	589,291	2,541,085	::	481,376	214,452	695,828	::	2,433,170	803,743	3,236,913
Average	513,323	363,050	876,373	::	499,520	273,796	773,316	::	1,012,843	636,846	1,649,688

<sup>1</sup>Includes catches from Cape Igvak and Balboa-Stepovak areas.

Table 14. 1987 Chignik area pink salmon catch and escapement by district.

	Eastern	Central	Chignik Bay	Western	Perryville	Total
Catch	2,079	7,769	13,887	187,701	35,339	246,775
Escapement	215,613	65,704	no survey	38,250	65,716	385,283
Total	217,692	73,473	13,887	225,951	101,055	632,058

Table 15. Chignik area pink salmon catch and escapement<sup>1</sup> from 1962-1987 (in thousands of fish).

YEAR		EASTERN	CENTRAL	CHIGNIK BAY	WESTERN	PERYVILLE	TOTAL
1962	Catch	1109.9	84.3	36.7	81.0	207.4	1519.3
	Escapement	401.7	83.9	30.0	242.0	155.5	913.1
	Total	1511.6	168.2	66.7	323.0	362.9	2432.4
1963	Catch	26.9	121.3	63.7	516.9	933.6	1662.4
	Escapement	126.2	92.6	20.7	305.0	162.0	706.5
	Total	153.1	213.9	84.4	821.9	1095.6	2368.9
1964	Catch	1251.5	71.9	123.6	112.9	122.6	1682.5
	Escapement	605.7	131.1	20.0	165.0	72.0	993.8
	Total	1857.2	203.0	143.6	277.9	194.6	2676.3
1965	Catch	25.7	69.5	31.5	345.6	644.8	1117.1
	Escapement	64.8	65.8	11.0	152.0	82.0	375.6
	Total	90.5	135.3	42.5	497.6	726.8	1492.7
1966	Catch	386.2	17.4	18.3	173.2	88.2	683.3
	Escapement	302.2	62.6	71.3	179.3	90.0	705.4
	Total	688.4	80.0	89.6	352.5	178.2	1388.7
1967	Catch	22.6	26.0	27.4	27.1	5.2	108.3
	Escapement	56.1	18.5	5.7	104.4	155.3	340.0
	Total	78.7	44.5	33.1	131.5	160.5	448.3
1968	Catch	523.4	45.4	230.2	295.6	196.1	1290.7
	Escapement	390.3	66.1	81.4	151.3	128.7	817.8
	Total	913.7	111.5	311.6	446.9	324.8	2108.5
1969	Catch	1.7	1.4	29.5	485.0	1262.2	1779.8
	Escapement	46.0	69.6	11.7	422.0	218.6	767.9
	Total	47.7	71.0	41.2	907.0	1480.8	2547.7
1970	Catch	399.3	28.1	46.3	442.7	371.4	1287.8
	Escapement	201.7	60.7	43.6	202.0	72.6	580.6
	Total	601.0	88.8	89.9	644.7	444.0	1868.4
1971	Catch	29.0	20.5	65.3	285.4	212.1	612.3
	Escapement	23.0	74.8	5.5	268.8	45.0	417.1
	Total	52.0	95.3	70.8	554.2	257.1	1029.4

-Continued-



Table 15 (continued). Chignik area pink salmon catch and escapement<sup>1</sup> from 1962-1987 (in thousands).

YEAR		EASTERN	CENTRAL	CHIGNIK BAY	WESTERN	PERYVILLE	TOTAL
1972	Catch	13.0	0.8	31.6	14.9	12.0	72.3
	Escapement	15.9	3.1	5.8	8.6	7.8	41.2
	Total	28.9	3.9	37.4	23.5	19.8	113.5
1973	Catch	0.0	2.8	22.7	0.0	0.0	25.5
	Escapement	12.8	50.2	2.2	62.4	31.5	159.1
	Total	12.8	53.0	24.9	62.4	31.5	184.6
1974	Catch	1.1	21.7	33.8	13.3	0.0	69.9
	Escapement	76.2	9.8	4.0	77.4	60.2	227.6
	Total	77.3	31.5	37.8	90.7	60.2	297.5
1975	Catch	0.0	31.4	27.4	7.4	0.0	66.2
	Escapement	23.5	26.4	1.2	141.7	45.3	238.1
	Total	23.5	57.8	28.6	149.1	45.3	304.3
1976	Catch	28.8	16.4	104.3	134.8	104.7	389.0
	Escapement	228.8	66.0	12.3	114.2	89.3	510.6
	Total	257.6	82.4	116.6	249.0	194.0	899.6
1977	Catch	0.2	120.0	60.9	379.0	44.6	604.7
	Escapement	76.0	199.9	3.0	355.5	115.4	749.8
	Total	76.2	319.9	63.9	734.5	160.0	1354.5
1978	Catch	86.7	61.3	137.1	419.3	280.7	985.1
	Escapement	309.3	101.2	10.7	333.4	157.5	912.1
	Total	396.0	162.5	147.8	752.7	438.2	1897.2
1979	Catch	271.3	277.3	312.6	746.0	269.4	1876.6
	Escapement	194.3	297.0	1.2	185.0	181.3	858.8
	Total	465.6	574.3	313.8	931.0	450.7	2735.4
1980	Catch	514.8	96.9	180.6	215.6	107.9	1115.8
	Escapement	425.5	99.4	3.0	139.5	74.8	742.2
	Total	940.3	196.3	183.6	355.1	182.7	1858.0
1981	Catch	128.2	255.1	121.4	433.6	224.3	1162.6
	Escapement	154.7	76.5	1.4	249.3	116.0	597.9
	Total	282.9	331.6	122.8	682.9	340.3	1760.5

-Continued-

Table 15 (continued). Chignik area pink salmon catch and escapement<sup>1</sup> from 1962-1987 (in thousands).

YEAR		EASTERN	CENTRAL	CHIGNIK BAY	WESTERN	PERYVILLE	TOTAL
1982	Catch	89.1	80.6	83.0	602.4	18.3	873.4
	Escapement	301.5	26.1	2.4	45.9	13.4	389.3
	Total	390.6	106.7	85.4	648.3	31.7	1262.7
1983	Catch	7.8	7.8	27.3	164.3	113.9	321.1
	Escapement	46.3	11.0	1.0	36.0	64.5	158.8
	Total	54.1	18.8	28.3	200.3	178.4	479.9
1984	Catch	57.7	48.6	165.2	173.8	0.8	446.1
	Escapement	486.5	94.0	123.2	188.0	109.8	1001.5
	Total	544.2	142.6	288.4	361.8	110.6	1447.6
1985	Catch	6.9	19.6	16.0	89.3	43.2	175.0
	Escapement	212.1	7.4	0.0	67.5	235.2	522.2
	Total	219.0	27.0	16.0	156.8	278.4	697.2
1986	Catch	49.6	44.1	191.3	200.8	161.3	647.1
	Escapement	580.7	121.9	0.0	43.8	180.5	926.9
	Total	630.3	166.0	191.3	244.6	341.8	1574.0
1987	Catch	2.1	7.8	13.9	187.7	35.4	246.8
	Escapement	215.6	65.7	0.0	38.3	65.7	385.3
	Total	217.7	73.5	13.9	226	101.1	632.1

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 16. Chignik area 1987 chum salmon catch and escapement by district.

	Eastern	Central	Chignik Bay	Western	Perryville	Total
Catch	8,890	9,437	5,163	86,898	16,873	27,261
Escapement	38,302	17,499	100	19,664	9,826	85,391
Total	47,192	26,936	5,263	106,562	26,699	212,652

Table 17. Chignik area chum salmon catch and escapement<sup>1</sup>, 1962-1987 (in thousands).

YEAR		EASTERN	CENTRAL	CHIGNIK BAY	WESTERN	PERYVILLE	TOTAL
1962	CATCH	74.7	132.0	5.2	134.4	17.9	364.2
	ESCAPEMENT	79.6	40.4	6.7	83.1	10.5	220.3
	TOTAL	154.3	172.4	11.9	217.5	28.4	584.5
1963	CATCH	20.5	23.1	5.3	44.7	19.1	112.7
	ESCAPEMENT	55.2	34.0	0.8	10.0	7.0	107.0
	TOTAL	75.7	57.1	6.1	54.7	26.1	219.7
1964	CATCH	242.7	50.3	8.5	21.2	10.6	333.3
	ESCAPEMENT	165.4	24.2	2.5	37.0	26.0	255.1
	TOTAL	408.1	74.5	11.0	58.2	36.6	588.4
1965	CATCH	32.4	37.8	1.2	36.4	12.8	120.6
	ESCAPEMENT	58.0	19.2	3.0	25.0	7.0	112.2
	TOTAL	90.4	57.0	4.2	61.4	19.8	232.8
1966	CATCH	130.1	20.9	6.6	73.8	7.9	239.3
	ESCAPEMENT	58.0	10.0	4.5	12.0	20.4	104.9
	TOTAL	188.1	30.9	11.1	85.8	28.3	344.2
1967	CATCH	24.4	9.9	5.9	33.6	1.7	75.5
	ESCAPEMENT	89.8	17.2	4.0	24.0	5.7	140.7
	TOTAL	114.2	27.1	9.9	57.6	7.4	216.2
1968	CATCH	110.1	4.2	5.4	90.1	14.0	223.8
	ESCAPEMENT	63.0	14.5	1.0	9.6	1.8	89.9
	TOTAL	173.1	18.7	6.4	99.7	15.8	313.7
1969	CATCH	3.7	3.2	2.9	36.8	21.1	67.7
	ESCAPEMENT	66.5	6.5	1.5	27.6	1.0	103.1
	TOTAL	70.2	9.7	4.4	64.4	22.1	170.8
1970	CATCH	268.5	28.6	1.7	139.6	26.3	464.7
	ESCAPEMENT	126.0	23.4	21.0	49.7	13.0	233.1
	TOTAL	394.5	52.0	22.7	189.3	39.3	697.8
1971	CATCH	102.3	13.8	19.4	177.5	40.9	353.9
	ESCAPEMENT	219.2	29.1	7.1	184.1	30.0	469.5
	TOTAL	321.5	42.9	26.5	361.6	70.9	823.4

-Continued-

Table 17 (continued). Chignik area chum salmon catch and escapement<sup>1</sup>,  
1962-1987 (in thousands).

YEAR		EASTERN	CENTRAL	CHIGNIK BAY	WESTERN	PERYVILLE	TOTAL
1972	CATCH	27.8	1.5	18.2	18.5	12.3	78.3
	ESCAPEMENT	107.4	14.2	3.3	59.0	11.5	195.4
	TOTAL	135.2	15.7	21.5	77.5	23.8	273.7
1973	CATCH	0.0	1.4	7.3	0.0	0.0	8.7
	ESCAPEMENT	59.1	12.2	0.7	35.6	9.3	116.9
	TOTAL	59.1	13.6	8.0	35.6	9.3	125.6
1974	CATCH	0.4	13.9	17.5	3.2	0.0	35.0
	ESCAPEMENT	76.3	18.1	2.1	39.4	12.5	148.4
	TOTAL	76.7	32.0	19.6	42.6	12.5	183.4
1975	CATCH	0.0	3.2	21.2	0.8	0.0	25.2
	ESCAPEMENT	41.3	18.8	2.1	43.4	20.5	126.1
	TOTAL	41.3	22.0	23.3	44.2	20.5	151.3
1976	CATCH	10.0	3.4	18.2	33.0	15.6	80.2
	ESCAPEMENT	122.3	17.8	2.4	55.0	8.9	206.4
	TOTAL	132.3	21.2	20.6	88.0	24.5	286.6
1977	CATCH	1.5	8.9	8.6	88.0	3.4	110.4
	ESCAPEMENT	54.5	9.3	2.0	70.4	15.4	151.6
	TOTAL	56.0	18.2	10.6	158.4	18.8	262.0
1978	CATCH	17.4	10.3	15.0	45.9	32.1	120.7
	ESCAPEMENT	55.8	13.8	2.1	27.3	5.3	104.3
	TOTAL	73.2	24.1	17.1	73.2	37.4	225.0
1979	CATCH	32.6	11.2	31.3	83.2	26.1	184.4
	ESCAPEMENT	79.5	44.8	1.6	42.5	12.8	181.2
	TOTAL	112.1	56.0	32.9	125.7	38.9	365.6
1980	CATCH	56.8	94.1	27.2	92.0	41.3	311.4
	ESCAPEMENT	107.0	34.2	0.3	56.5	29.1	227.1
	TOTAL	163.8	128.3	27.5	148.5	70.4	538.5
1981	CATCH	94.4	175.0	38.1	221.6	51.3	580.4
	ESCAPEMENT	126.0	26.1	0.5	70.3	19.3	242.2
	TOTAL	220.4	201.1	38.6	291.9	70.6	822.6

-Continued-

Table 17 (continued). Chignik area chum salmon catch and escapement<sup>1</sup>, 1962-1987 (in thousands).

YEAR		EASTERN	CENTRAL	CHIGNIK BAY	WESTERN	PERYVILLE	TOTAL
1982	CATCH	64.5	33.7	16.0	253.3	22.6	390.1
	ESCAPEMENT	145.4	49.4	1.4	35.4	23.6	255.2
	TOTAL	209.9	83.1	17.4	288.7	46.2	645.3
1983	CATCH	8.2	9.8	16.7	101.9	22.6	159.2
	ESCAPEMENT	50.2	17.0	0.1	20.1	8.2	95.6
	TOTAL	58.4	26.8	16.8	122.0	30.8	254.8
1984	CATCH	21.1	8.3	8.2	25.3	0.5	63.4
	ESCAPEMENT	214.7	35.4	0.3	73.8	46.0	370.2
	TOTAL	235.8	43.7	8.5	99.1	46.5	433.6
1985	CATCH	1.0	6.2	5.4	12.4	1.1	26.1
	ESCAPEMENT	4.9	9.6	0.0	34.6	12.9	62.0
	TOTAL	5.9	15.8	5.4	47.0	14.0	88.1
1986	CATCH	17.9	29.5	18.2	74.1	37.0	176.7
	ESCAPEMENT	8.5	31.0	0.0	5.3	7.7	52.5
	TOTAL	26.4	60.5	18.2	79.4	44.7	229.2
1987	CATCH	8.9	9.4	5.2	86.9	16.9	127.3
	ESCAPEMENT	38.3	17.5	0.1	19.7	9.8	85.4
	TOTAL	47.2	26.9	5.3	106.6	26.7	212.7

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 18. Chignik area pink and chum salmon catch and escapement<sup>1</sup>, 1962-1987 (in thousands).

YEAR	CATCH		ESCAPEMENT		TOTAL	
	PINKS	CHUMS	PINKS	CHUMS	PINKS	CHUMS
1962	1519.3	364.2	913.1	220.3	2432.4	584.5
1963	1662.4	112.7	706.5	107.0	2368.9	219.7
1964	1682.4	333.3	993.8	255.1	2676.3	588.4
1965	1118.1	120.6	375.6	112.2	1493.7	232.8
1966	683.3	239.3	705.4	104.9	1388.7	344.2
1967	108.3	75.5	340.0	140.7	448.3	216.2
1968	1290.7	223.8	817.8	89.9	2108.5	313.7
1969	1779.8	67.7	767.9	103.1	2547.7	170.8
1970	1287.8	464.7	580.6	233.1	1868.4	697.8
1971	612.3	353.9	417.1	469.5	1029.4	823.4
1972	72.3	78.3	41.2	195.4	113.5	273.7
1973	25.5	8.7	159.1	116.9	184.6	125.6
1974	69.9	35.0	227.6	148.4	297.5	183.4
1975	66.2	25.2	238.1	126.1	304.3	151.3
1976	389.0	80.2	510.6	206.4	899.6	286.6
1977	604.7	110.4	749.8	151.6	1354.5	262.0
1978	985.1	120.7	912.1	104.3	1897.2	225.0
1979	2043.0	188.0	768.2	218.0	2811.2	406.0
1980	1125.5	312.6	742.2	227.1	1867.7	539.7
1981	1162.6	580.3	598.1	242.1	1760.7	822.4
1982	873.4	390.1	389.4	255.1	1262.8	645.2
1983	321.1	159.3	158.9	95.6	480.0	254.9
1984	446.2	63.4	1001.6	370.2	1447.8	433.6
1985	175.0	26.1	522.1	62.0	697.1	88.1
1986	647.1	176.6	926.9	52.5	1574.0	229.1
1987	246.8	127.3	385.3	85.4	632.1	212.7

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 19a. Estimated total pink and chum salmon escapement<sup>1</sup>  
(in thousands).

YEAR	THOMPSON VALLEY 272- 204		HOOK BAY 272- 302		CAPE KUMLIK 272- 501		BEAR CR. 272- 505	
	PINK	CHUM	PINK	CHUM	PINK	CHUM	PINK	CHUM
1953	25.3	0.0	13.0	6.3	-	-	0.0	0.7
1954	28.2	4.5	14.3	5.3	-	-	0.2	0.2
1955	115.0	3.0	78.0	0.0	-	-	1.0	0.0
1956	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	7.0	0.0	18.9	4.1	7.0	0.0	0.0	12.4
1963	23.3	0.0	33.0	7.5	23.0	0.0	0.0	9.5
1964	4.1	0.0	42.0	1.2	8.7	0.0	0.0	8.8
1965	9.4	0.0	23.3	2.1	13.7	0.0	0.0	8.5
1966	4.1	0.0	10.0	0.5	3.8	0.0	0.0	4.3
1967	2.0	0.4	7.3	2.5	5.2	0.0	0.0	8.0
1968	-	-	5.0	0.0	-	-	0.0	2.7
1969	19.0	0.0	30.0	0.0	-	-	0.0	4.5
1970	12.0	0.0	11.0	1.0	5.0	0.0	0.0	10.0
1971	7.5	0.0	13.0	8.0	51.0	0.0	0.0	10.0
1972	0.2	0.0	0.4	1.1	0.2	0.0	0.0	2.5
1973	2.3	0.2	4.9	4.7	40.0	0.0	0.0	4.0
1974	1.6	0.1	3.8	0.8	0.6	0.0	0.0	2.3
1975	10.2	0.0	1.3	6.0	17.8	0.0	0.0	1.5
1976	5.5	0.2	8.0	2.5	2.6	0.0	0.0	1.4
1977	29.4	0.0	22.6	2.0	124.0	0.0	0.5	2.6
1978	14.0	0.0	14.5	2.8	6.1	0.0	0.1	1.5
1979	35.5	1.0	42.7	11.0	153.0	0.0	0.0	5.0
1980	0.7	0.0	24.5	4.2	2.6	0.0	0.2	0.0
1981	6.5	0.5	13.9	9.0	36.2	0.0	0.1	0.0
1982	1.2	0.0	7.3	10.0	0.9	0.0	0.0	2.5
1983	2.3	0.0	0.2	0.3	0.0	0.0	2.0	7.9
1984	14.0	0.0	16.2	0.1	3.7	0.0	0.3	2.3
1985	0.0	0.0	2.0	0.0	-	-	0.0	7.2
1986	0.3	0.0	66.9	0.0	38.2	0.0	0.0	7.5
1987	-	-	9.5	0.3	46.9	0.3	0.0	12.0

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.



Table 19b. Estimated total pink and chum salmon escapement<sup>1</sup>  
(in thousands).

YEAR	RUDYS CR. 272- 509		NORTH FORK 272- 514		ANIACHAK R. 272- 605		CAPE AGUTKA 272- 606	
	PINK	CHUM	PINK	CHUM	PINK	CHUM	PINK	CHUM
1953	0.7	0.2	1.3	3.5	0.0	35.0	0.2	0.7
1954	-	-	55.0	4.6	100.0	37.2	3.9	1.5
1955	15.0	4.0	13.5	1.0	16.0	0.0	1.2	0.0
1956	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	4.5	5.2	34.0	0.8	126.0	25.0	17.6	0.5
1963	0.0	12.0	9.7	1.8	6.0	14.6	0.4	0.0
1964	0.5	5.0	68.0	3.0	175.0	82.5	11.0	1.1
1965	0.0	1.1	8.7	2.0	10.8	4.0	5.1	0.1
1966	2.0	3.0	2.0	-	90.8	9.0	7.7	0.2
1967	1.0	3.0	20.0	1.1	2.0	10.5	1.1	0.1
1968	2.0	7.0	26.0	0.0	85.0	10.0	22.3	0.0
1969	0.2	1.0	5.2	4.0	0.1	0.5	4.6	2.0
1970	0.0	3.0	24.0	8.0	40.0	30.5	10.0	2.0
1971	0.0	1.3	0.0	4.5	0.0	11.5	2.0	3.0
1972	0.2	1.7	1.7	6.9	1.8	7.1	2.5	1.5
1973	0.0	1.2	2.8	1.5	2.7	4.0	1.5	1.8
1974	0.8	4.2	2.5	4.2	29.8	25.7	1.6	0.0
1975	0.0	1.8	0.4	3.7	2.4	5.5	1.9	0.2
1976	6.2	3.7	17.5	7.9	165.0	34.0	5.9	0.8
1977	6.3	0.9	6.6	2.3	3.0	14.8	1.0	0.1
1978	4.0	2.2	46.0	6.9	215.5	23.2	8.0	0.2
1979	12.0	7.7	12.7	5.6	0.0	0.2	13.0	1.5
1980	9.3	0.0	38.5	29.5	40.0	43.0	20.0	5.5
1981	0.7	0.1	15.8	16.5	2.7	32.0	5.8	0.0
1982	0.2	8.7	19.0	3.5	130.0	47.0	21.0	0.0
1983	0.0	1.3	4.1	1.3	1.0	3.1	0.1	0.0
1984	4.5	5.0	32.4	17.4	56.4	47.0	17.2	1.2
1985	0.0	0.0	4.7	1.3	0.0	0.0	0.0	0.0
1986	38.0	10.9	34.3	5.0	1.5	0.5	65.0	0.4
1987	0.0	0.0	8.8	4.0	2.5	0.3	4.2	0.3

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 19c. Estimated total pink and chum salmon escapement<sup>1</sup>  
(in thousands).

YEAR	MAIN CR. 272- 702		NORTHEAST CR. 272- 703		YANTARNI CR. 272- 721		OCEAN BEACH 272- 801	
	PINK	CHUM	PINK	CHUM	PINK	CHUM	PINK	CHUM
1953	0.2	17.0	3.5	2.0	-	-	-	-
1954	6.9	21.5	1.1	0.8	-	-	-	-
1955	25.2	0.8	-	-	7.5	7.0	8.0	3.0
1956	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	33.0	3.6	1.6	2.5	52.5	0.1	45.0	2.0
1963	16.0	5.8	5.0	0.9	16.0	0.3	3.4	0.0
1964	40.5	-	2.3	3.0	42.0	21.0	34.6	10.1
1965	5.0	4.8	2.3	6.0	4.0	7.6	0.4	1.0
1966	3.0	0.0	1.3	0.2	18.5	5.0	11.0	3.3
1967	16.5	2.0	2.0	0.2	-	-	-	-
1968	28.0	8.0	7.7	1.0	25.0	6.5	26.5	0.0
1969	3.0	15.0	7.0	4.5	1.5	11.0	6.0	3.5
1970	13.0	7.0	7.0	6.0	1.5	11.5	7.5	5.0
1971	1.0	20.0	2.0	5.5	0.0	18.0	0.0	3.5
1972	2.0	8.0	1.7	0.5	2.1	21.0	0.5	4.6
1973	1.0	7.0	1.1	3.1	0.3	6.5	0.6	1.7
1974	6.6	6.3	3.0	2.0	3.7	3.8	2.3	2.2
1975	4.7	8.0	0.4	0.7	0.3	1.6	0.8	0.2
1976	5.5	8.5	3.8	2.0	5.8	12.5	4.2	3.0
1977	4.5	3.5	10.0	0.8	1.9	3.5	1.1	0.4
1978	5.6	7.6	4.4	4.6	7.9	3.3	7.1	0.5
1979	13.5	14.0	7.0	7.5	14.0	9.5	1.5	0.0
1980	53.5	17.0	4.8	3.0	60.0	11.0	27.6	0.0
1981	6.3	16.3	5.9	2.5	13.5	18.2	10.5	5.5
1982	36.0	12.3	6.2	3.7	8.5	25.5	0.0	14.5
1983	9.2	6.7	3.2	4.7	3.6	13.4	3.1	1.5
1984	15.7	14.5	7.0	4.3	26.5	18.7	19.0	13.2
1985	13.7	4.0	9.0	0.0	67.8	0.7	9.9	0.0
1986	85.0	0.0	13.6	0.0	3.1	0.3	1.8	0.2
1987	14.3	1.5	7.5	0.4	18.0	3.0	13.0	2.7

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 19d. Estimated total pink and chum salmon escapement<sup>1</sup>  
(in thousands).

YEAR	NAKALILOK R. 272- 804		CHIGINAGAK 272- 902		CHIGINAGAK R. 272- 903		CHIGINAGAK 272- 904	
	PINK	CHUM	PINK	CHUM	PINK	CHUM	PINK	CHUM
1953	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-
1955	3.0	0.5	-	-	0.0	15.9	-	-
1956	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	22.0	0.1	16.0	0.0	0.3	34.3	20.1	0.0
1963	10.4	0.1	1.2	0.0	0.0	15.0	43.0	0.0
1964	89.0	3.0	20.0	0.0	6.0	24.4	41.4	0.0
1965	0.5	9.0	0.4	0.0	0.0	13.8	12.4	0.1
1966	12.5	0.0	5.8	0.0	0.0	33.2	16.0	0.0
1967	3.5	18.5	0.5	0.1	0.0	27.0	12.4	0.0
1968	7.4	2.0	21.0	0.0	2.0	29.5	20.0	0.0
1969	8.0	3.5	1.3	0.0	-	20.0	6.0	0.0
1970	10.0	6.5	11.0	0.0	0.0	31.0	4.0	0.0
1971	1.0	44.0	2.8	0.0	0.0	86.0	1.1	0.0
1972	0.0	6.0	0.1	0.3	1.0	33.0	0.1	0.1
1973	0.5	5.2	0.3	0.0	0.2	28.3	0.5	0.0
1974	2.2	4.8	0.2	0.2	8.5	28.5	0.9	0.0
1975	3.0	4.8	0.5	0.5	2.9	20.3	0.8	0.0
1976	2.4	14.2	0.7	0.0	0.7	35.0	2.2	0.0
1977	3.8	4.9	2.7	0.0	1.8	19.4	3.8	0.0
1978	8.1	4.2	4.4	0.4	1.3	9.1	3.5	0.0
1979	12.0	2.9	11.0	15.0	0.4	24.3	7.2	0.0
1980	25.6	14.0	17.9	0.0	16.3	5.7	14.5	0.0
1981	6.5	8.0	5.0	0.0	6.0	23.4	6.9	0.0
1982	4.0	12.3	2.2	0.0	2.0	18.5	1.7	0.4
1983	4.8	4.2	0.7	0.0	1.8	9.6	1.9	0.0
1984	15.0	36.5	16.6	0.0	6.9	53.8	19.5	3.0
1985	27.0	0.0	0.0	0.0	1.0	0.0	5.0	0.0
1986	12.7	1.0	42.3	0.0	21.1	3.3	8.9	0.0
1987	1.4	3.8	3.2	0.4	67.5	15.7	11.0	3.3

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 19e. Estimated total pink and chum salmon escapement<sup>1</sup>  
(in thousands).

YEAR	CHIGINAGAK 272- 905		AGRIPINA R. 272- 961		GLACIER CR. 272- 962		KILOKAK 272- 963	
	PINK	CHUM	PINK	CHUM	PINK	CHUM	PINK	CHUM
1953	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-
1955	-	-	-	-	0.0	0.0	-	-
1956	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	17.1	0.0	12.0	3.0	0.5	3.0	16.2	0.0
1963	1.0	0.0	19.2	0.1	0.0	10.0	0.8	0.0
1964	100.0	0.3	8.5	0.0	0.5	6.0	14.2	0.0
1965	1.2	0.0	20.1	0.0	0.0	1.3	0.1	0.0
1966	90.5	0.0	-	-	-	-	24.5	0.0
1967	5.8	1.8	7.3	0.5	0.0	5.6	0.3	0.0
1968	53.0	0.0	12.0	0.0	0.0	0.2	65.6	0.0
1969	2.4	0.0	2.5	0.0	0.0	2.0	0.2	0.0
1970	24.0	0.0	15.5	0.0	0.0	5.0	55.0	0.0
1971	4.3	2.0	6.6	0.0	0.0	6.0	0.0	0.0
1972	2.4	0.0	1.6	0.0	0.0	4.6	2.1	0.0
1973	1.0	0.0	4.2	0.5	0.0	3.0	0.1	0.0
1974	1.9	0.0	1.2	0.2	0.0	0.9	0.3	0.0
1975	2.1	0.2	2.7	0.0	0.2	0.5	0.6	0.0
1976	20.1	0.4	4.9	0.0	0.0	1.8	4.9	0.0
1977	22.0	1.3	4.3	0.0	0.0	1.0	0.5	0.0
1978	41.0	0.4	7.4	0.1	0.6	1.1	5.9	0.0
1979	61.1	0.0	23.5	0.0	0.0	1.6	1.1	0.0
1980	38.5	0.0	14.3	0.0	5.2	0.7	61.0	0.0
1981	48.0	0.1	13.4	0.0	0.05	0.6	0.3	0.0
1982	34.1	0.0	33.0	0.025	0.0	1.1	20.0	0.0
1983	3.6	5.0	5.0	0.0	1.3	0.2	0.3	0.0
1984	117.2	0.2	39.8	0.05	1.0	3.2	75.8	0.0
1985	17.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0
1986	85.0	0.1	0.0	0.0	0.0	0.0	175.0	0.0
1987	20.0	0.3	1.0	0.0	6.2	0.0	0.0	0.0

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 19f. Estimated total pink and chum salmon escapement<sup>1</sup>  
(in thousands).

	COAL CAPE 273- 702		IVAN RIVER 273- 722		FOOT BAY 273- 802		SPOON CR. 273- 823	
YEAR	PINK CHUM		PINK CHUM		PINK CHUM		PINK CHUM	
1953	-	-	-	-	-	-	1.0	1.5
1954	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	15.0	0.0
1956	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	129.0	12.0	85.0	36.0	13.3	1.0	10.6	2.0
1963	127.5	0.0	124.0	4.5	11.0	1.0	3.5	0.0
1964	60.0	10.0	65.5		12.0	0.9	13.2	0.0
1965	48.0	5.9	89.1	0.0	5.3	0.0	1.4	0.0
1966	9.7	2.0	94.5	1.0	18.4	0.2	15.5	0.0
1967	9.0	1.0	35.0	7.0	4.7	0.0	2.4	0.0
1968	39.0	-	85.0	0.0	14.2	0.0	7.8	0.0
1969	77.0	0.0	302.0	0.0	14.2	0.1	6.5	0.0
1970	69.0	0.0	103.0	17.0	14.5	3.0	10.5	0.0
1971	8.0	0.0	205.0	90.0	30.0	5.2	7.0	0.0
1972	2.5	4.5	4.4	13.0	0.6	0.6	0.2	0.0
1973	1.6	1.0	43.8	17.2	7.5	0.3	0.8	0.2
1974	62.8	5.1	3.9	22.3	2.1	0.3	1.7	0.0
1975	21.0	4.5	96.0	24.5	9.8	0.0	4.5	0.0
1976	70.3	13.4	17.3	22.1	7.0	1.1	9.3	1.9
1977	78.5	0.0	236.0	36.0	18.3	0.8	5.7	0.1
1978	218.5	0.1	73.7	0.8	16.6	2.0	7.5	0.1
1979	50.2	2.0	90.0	32.0	9.6	0.4	7.1	1.0
1980	53.0	12.5	51.0	22.1	3.5	1.0	4.5	0.9
1981	84.9	3.0	117.0	28.0	10.0	4.6	6.7	0.8
1982	30.5	3.3	21.0	16.3	1.4	2.8	0.1	0.4
1983	17.8	0.5	12.2	7.2	1.2	1.1	0.8	0.0
1984	60.2	6.5	103.0	40.0	6.0	1.8	0.3	0.1
1985	3.5	0.5	49.6	23.3	5.9	1.7	0.3	0.0
1986	22.0	0.0	10.1	0.0	4.9	0.0	0.5	0.0
1987	13.4	0.4	14.8	2.4	6.6	1.0	0.0	0.0

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 19g. Estimated total pink and chum salmon escapement<sup>1</sup>  
(in thousands).

YEAR	PORTAGE 273- 842		SEAL BAY 273- 843		KUPREANOF 275- 401		SMOKEY HOLLOW 275- 402	
	PINK	CHUM	PINK	CHUM	PINK	CHUM	PINK	CHUM
1953	5.3	0.5	2.0	2.0	-	-	-	-
1954	-	-	-	-	-	-	-	-
1955	0.0	20.0	0.0	0.6	-	-	-	-
1956	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-
1962	0.0	23.8	0.0	1.8	12.2	0.0	3.6	3.9
1963	27.0	4.4	6.0	0.0	3.5	0.0	1.5	2.0
1964	0.0	20.4	1.3	0.0	13.0	1.1	0.8	17.0
1965	1.7	8.3	3.3	0.0	3.0	0.0	0.0	0.5
1966	24.4	8.9	4.0	0.0	-	-	0.0	7.4
1967	28.5	15.0	6.0	0.5	6.7	0.0	0.0	0.3
1968	3.3	5.0	2.5	0.0	14.0	0.0	0.0	0.9
1969	0.1	27.5	7.5	0.0	6.8	0.2	0.0	0.2
1970	9.0	27.6	5.2	0.0	11.0	0.0	0.0	2.5
1971	10.2	60.1	5.0	10.1	3.5	0.0	0.0	1.5
1972	0.1	21.4	0.0	11.1	1.0	0.5	0.0	2.0
1973	2.9	18.1	2.0	0.1	0.2	0.5	0.2	0.6
1974	0.0	8.7	1.2	1.0	1.2	0.5	0.4	0.8
1975	0.4	9.2	5.3	2.3	1.0	0.1	0.1	0.1
1976	0.9	8.5	0.6	4.6	4.0	0.0	0.6	0.8
1977	5.0	20.5	3.1	5.2	5.1	0.0	2.3	1.6
1978	4.1	19.0	1.5	1.4	16.1	0.0	0.5	0.5
1979	17.7	4.5	0.2	0.6	28.0	0.0	0.6	0.4
1980	10.2	18.5	1.0	0.5	11.6	0.0	0.5	0.3
1981	6.5	33.3	9.0	0.0	22.5	0.1	1.5	0.0
1982	0.0	6.3	0.0	3.5	5.5	0.0	0.0	0.0
1983	0.3	7.3	0.8	0.0	3.5	0.0	0.2	2.6
1984	1.0	14.6	4.6	5.5	5.2	0.0	0.3	1.4
1985	0.0	9.1	7.3	0.0	-	-	0.2	0.0
1986	0.7	5.0	0.0	0.1	-	-	0.5	0.1
1987	0.0	10.2	0.5	3.9	-	-	1.4	0.1

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 19h. Estimated total pink and chum salmon<sup>1</sup>  
escapement (in thousands).

YEAR	WASCO'S CREEK 275- 404		IVANOF RIVER 275- 406		HUMPBAC CR. 275- 502	
	PINK	CHUM	PINK	CHUM	PINK	CHUM
1953	-	-	-	-	-	-
1954	-	-	-	-	-	-
1955	-	-	-	-	-	-
1956	-	-	-	-	-	-
1957	-	-	-	-	-	-
1958	-	-	-	-	-	-
1959	-	-	-	-	-	-
1960	-	-	-	-	-	-
1961	-	-	-	-	-	-
1962	23.0	0.0	48.5	2.5	64.5	3.0
1963	1.0	0.0	128.0	4.0	26.4	0.4
1964	0.0	6.5	15.0	0.8	40.7	0.2
1965	2.0	0.0	61.4	5.5	13.8	0.0
1966	10.5	0.0	39.5	9.0	30.0	0.0
1967	2.0	0.0	98.5	3.0	36.7	0.0
1968	0.3	0.0	60.0	0.5	52.3	0.0
1969	4.0	0.0	122.4	0.5	75.0	0.0
1970	2.5	0.0	51.0	10.0	31.0	0.0
1971	3.0	4.0	25.0	21.0	13.4	1.5
1972	0.3	0.0	6.3	7.8	0.5	1.0
1973	0.0	0.0	24.7	8.2	6.1	0.6
1974	6.3	1.9	41.9	8.1	10.2	0.7
1975	0.9	0.0	33.4	15.0	9.2	3.5
1976	6.2	0.2	55.0	6.8	20.3	0.7
1977	1.6	0.5	51.8	9.0	48.2	1.2
1978	9.7	0.0	71.5	4.2	51.0	0.2
1979	2.0	0.1	89.0	7.1	59.0	5.0
1980	0.0	3.0	40.5	22.7	18.7	3.1
1981	0.0	0.2	39.9	17.0	46.5	2.0
1982	0.1	2.3	2.7	9.4	4.8	11.0
1983	2.0	0.0	34.3	5.6	17.8	0.0
1984	14.6	1.4	61.0	42.5	18.3	0.7
1985	0.3	0.0	181.6	10.6	36.8	0.3
1986	10.0	0.0	150.0	7.6	12.0	0.0
1987	11.9	0.1	24.7	6.9	15.5	0.8

<sup>1</sup>Since 1985 escapement estimates determined using method developed in: Johnson, B. Alan and B. Barrett. In press. Estimation of salmon escapement based on stream survey data: A geometric approach. Alaska Department of Fish and Game, Division of Commercial Fisheries, Information Leaflet, Juneau, Ak.

Table 20. Pink and chum salmon return per spawner Central and Eastern districts.

PINK EVEN YEAR CYCLE				CHUM EVEN YEAR CYCLE			
BROOD YEAR	PINK ESCAPEMENT	RETURN 2-YRS LATER	RETURN/ SPAWNER	BROOD YEAR	CHUM ESCAPEMENT	RETURN 4-YRS LATER	RETURN/ SPAWNER
1962	485,600	2,060,200	4.24	1962	120,000	219,000	1.83
1964	736,800	768,400	1.04	1964	189,600	191,800	1.01
1966	364,800	1,025,200	2.81	1966	68,000	149,400	2.20
1968	456,400	689,800	1.51	1968	77,500	150,900	1.95
1970	262,400	32,800	0.13	1970	149,400	108,700	0.73
1972	19,000	108,800	5.73	1972	121,600	153,500	1.26
1974	86,000	340,000	3.95	1974	94,400	100,600	1.07
1976	294,800	586,500	1.99	1976	140,100	292,100	2.08
1978	439,300	1,136,600	2.59	1978	69,600	292,977	4.21
1980	524,900	497,330	0.95	1980	141,200	279,489	1.98
1982	327,650	686,920	2.10	1982	194,795	86,820	0.45
1984	580,575	796,357	1.37	1984	250,100		
1986	702,595			1986	39,438		

PINK ODD YEAR CYCLE				CHUM ODD YEAR CYCLE			
BROOD YEAR	PINK ESCAPEMENT	RETURN 2-YRS LATER	RETURN/ SPAWNER	BROOD YEAR	CHUM ESCAPEMENT	RETURN 4-YRS LATER	RETURN/ SPAWNER
1963	218,800	225,800	1.03	1963	89,200	141,300	1.58
1965	130,600	123,200	0.94	1965	77,200	79,900	1.03
1967	74,600	118,700	1.59	1967	107,000	364,400	3.41
1969	115,600	147,300	1.27	1969	73,000	72,700	1.00
1971	97,800	65,800	0.67	1971	248,300	63,300	0.25
1973	63,000	81,300	1.29	1973	71,300	74,200	1.04
1975	49,900	396,100	7.94	1975	60,100	168,100	2.80
1977	275,900	1,039,800	3.77	1977	63,800	460,039	7.21
1979	491,300	737,346	1.50	1979	124,300	85,221	0.69
1981	232,650	115,544	0.50	1981	152,580	21,671	0.14
1983	58,380	261,971	4.49	1983	67,200	74,128	1.10
1985	219,467	291,165	1.33	1985	14,493		
1987	281,317			1987	55,801		



Table 21. Pink and chum salmon return per spawner Western and Perryville districts.

PINK EVEN YEAR CYCLE				CHUM EVEN YEAR CYCLE			
BROOD YEAR	PINK ESCAPEMENT	RETURN 2-YRS LATER	RETURN/ SPAWNER	BROOD YEAR	CHUM ESCAPEMENT	RETURN 4-YRS LATER	RETURN/ SPAWNER
1962	397,500	472,500	1.19	1962	93,600	114,100	1.22
1964	237,000	530,700	2.24	1964	63,000	115,500	1.83
1966	269,300	771,700	2.87	1966	32,400	228,600	7.06
1968	280,000	1,088,700	3.89	1968	11,400	101,300	8.89
1970	274,600	43,300	0.16	1970	62,700	55,100	0.88
1972	16,400	150,900	9.20	1972	70,500	112,500	1.60
1974	137,600	443,000	3.22	1974	51,900	116,600	2.25
1976	203,500	1,188,000	5.84	1976	63,900	218,900	3.43
1978	492,000	537,800	1.09	1978	38,800	334,817	8.63
1980	214,300	680,071	3.17	1980	85,600	145,661	1.70
1982	59,340	472,461	7.96	1982	58,937	124,074	2.11
1984	297,800	586,413	1.97	1984	119,815		
1986	224,314			1986	12,983		

PINK ODD YEAR CYCLE				CHUM ODD YEAR CYCLE			
BROOD YEAR	PINK ESCAPEMENT	RETURN 2-YRS LATER	RETURN/ SPAWNER	BROOD YEAR	CHUM ESCAPEMENT	RETURN 4-YRS LATER	RETURN/ SPAWNER
1963	467,000	1,225,400	2.62	1963	17,000	65,000	3.82
1965	234,000	292,000	1.25	1965	32,000	86,500	2.70
1967	259,700	2,387,800	9.19	1967	29,700	432,500	14.56
1969	640,600	811,300	1.27	1969	28,600	44,900	1.57
1971	313,000	93,900	0.30	1971	214,100	64,700	0.30
1973	93,900	194,400	2.07	1973	44,900	177,200	3.95
1975	187,000	894,500	4.78	1975	63,900	164,600	2.58
1977	470,900	1,381,700	2.93	1977	85,800	362,423	4.22
1979	366,300	1,023,317	2.79	1979	55,300	152,950	2.77
1981	365,400	378,716	1.04	1981	89,550	61,055	0.68
1983	100,500	435,092	4.33	1983	28,350	133,261	4.70
1985	302,630	327,006	1.08	1985	47,520		
1987	103,966			1987	29,490		

Table 22. Age composition of sport caught chinook from scale samples collected in Chignik River, 1987.

	AGE					
	1.1	1.2	1.3	1.4	2.2	Total
Number	0	8	45	42	2	97
Percent	0.00%	8.20%	46.40%	2.10%	43.30%	100.00%

Table 23. Age class composition, in percent, from the 1987 Chignik Lagoon Sockeye salmon commercial catch.

DATE OF SAMPLE	STAT. WEEK	AGE													SAMPLE SIZE
		0.1	0.2	0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	3.3	
06-Jun	23	0.00%	0.00%	1.36%	0.00%	5.26%	74.87%	0.51%	0.00%	2.89%	15.11%	0.00%	0.00%	0.00%	589
12-Jun	24	0.00%	0.00%	1.10%	0.00%	5.33%	77.94%	0.37%	0.00%	1.47%	13.60%	0.00%	0.18%	0.00%	544
16-Jun	25	0.00%	0.00%	1.11%	0.00%	3.97%	75.24%	0.16%	0.16%	2.70%	16.67%	0.00%	0.00%	0.00%	630
22-Jun	26	0.00%	0.00%	0.84%	0.17%	3.36%	72.65%	0.17%	0.17%	1.85%	20.81%	0.00%	0.00%	0.00%	596
28-Jun	27	0.00%	0.00%	0.83%	0.00%	4.17%	71.67%	0.00%	0.00%	3.33%	20.00%	0.00%	0.00%	0.00%	120
29-Jun	27	0.00%	0.24%	0.48%	0.00%	4.28%	67.46%	0.00%	0.00%	2.85%	24.70%	0.00%	0.00%	0.00%	421
02-Jul	27	0.00%	0.00%	0.52%	0.00%	1.92%	56.79%	0.35%	0.17%	3.83%	36.41%	0.00%	0.00%	0.00%	574
05-Jul	28	0.00%	0.00%	1.20%	0.00%	0.95%	47.95%	0.17%	0.00%	5.34%	44.58%	0.00%	0.00%	0.00%	581
10-Jul	28	0.18%	0.00%	0.00%	0.54%	2.15%	48.57%	0.00%	0.00%	6.99%	41.58%	0.00%	0.00%	0.00%	558
13-Jul	29	0.00%	0.21%	0.42%	0.63%	2.30%	38.28%	0.00%	0.21%	11.72%	46.03%	0.21%	0.00%	0.00%	478
22-Jul	30	0.00%	0.00%	0.19%	0.00%	0.77%	26.69%	0.00%	0.19%	20.12%	51.45%	0.39%	0.00%	0.19%	517
23-Jul	30	0.00%	0.00%	0.00%	0.00%	2.78%	27.78%	0.00%	0.00%	19.44%	47.22%	0.00%	0.00%	2.78%	36
27-Jul	31	0.00%	0.00%	0.87%	0.00%	1.74%	17.39%	0.00%	0.87%	23.48%	55.65%	0.00%	0.00%	0.00%	115
28-Jul	31	0.00%	0.00%	0.00%	0.00%	0.22%	23.37%	0.22%	1.12%	23.37%	51.24%	0.45%	0.00%	0.00%	445

-Continued-

Table 23. Age summaries 1987 Sockeye samples from commercial catch, Chignik Lagoon. (percent of sample) (continued)

DATE OF SAMPLE	STAT. WEEK	0.1	0.2	0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	3.3	SAMPLE SIZE
12-Aug	33	0.00%	0.00%	0.18%	0.36%	0.73%	11.68%	0.00%	1.28%	29.56%	56.20%	0.00%	0.00%	0.00%	548
18-Aug	34	0.00%	0.00%	0.19%	0.00%	0.97%	10.70%	0.00%	1.95%	17.90%	68.09%	0.00%	0.19%	0.00%	514
27-Aug	35	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%	10.00%	70.00%	0.00%	0.00%	0.00%	50
TOTAL AVE.	NUMBER PERCENT	1 0.01%	2 0.03%	45 0.62%	9 0.12%	184 2.52%	3,601 49.22%	11 0.15%	28 0.38%	718 9.81%	2,708 37.01%	5 0.07%	2 0.03%	2 0.03%	7,316 100.00%

Table 24. Age class composition, in percent, of the Black Lake sockeye escapement samples by date of sample, 1987.

Date	Stat. Week	-----Age-----						Total
		0.3	1.2	1.3	1.4	2.2	2.3	
26-Jun	26	0.00%	4.73%	63.51%	0.00%	2.03%	29.73%	148
27-Jun	26	0.00%	6.31%	71.36%	0.00%	2.43%	19.90%	206
28-Jun	27	0.00%	4.44%	72.22%	0.00%	4.07%	19.26%	270
29-Jun	27	1.40%	3.80%	72.80%	0.00%	1.20%	20.80%	500
30-Jun	27	1.68%	3.35%	81.01%	0.00%	3.07%	10.89%	358
01-Jul	27	1.58%	6.84%	79.21%	0.53%	2.37%	9.47%	380
Total Number		19	89	1,391	2	45	316	1,862
Average Percent		1.02%	4.78%	74.70%	0.11%	2.42%	16.97%	100.00%

Table 25. Age composition of the Chignik  
Lagoon coho catch samples by  
sample day, 1987 (number of fish).

	-----Age-----			Total
	1.1	2.1	3.1	
18-Aug	29	31	5	65
19-Aug	5	11	0	16
27-Aug	5	9	0	14
01-Sep	161	147	3.	311
Percent	49.26%	48.77%	1.97%	100.00%

Table 26. Daily abundance of Black Lake sockeye salmon in the escapement, by age class, 1987.

Statistical Week	AGE GROUP														Total	
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Other			
84	23	Numbers Percent	0 0.00%	0 0.00%	356 1.36%	1,350 5.15%	0 0.00%	19,948 76.13%	741 2.83%	127 0.48%	3,679 14.04%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	26,201 100.00%
	24	Numbers Percent	0 0.00%	0 0.00%	1,351 1.14%	5,944 4.99%	3 0.00%	94,431 79.34%	2,236 1.88%	486 0.41%	14,420 12.12%	145 0.12%	0 0.00%	0 0.00%	0 0.00%	119,016 100.00%
	25	Numbers Percent	0 0.00%	85 0.09%	887 0.92%	3,456 3.60%	182 0.19%	73,376 76.33%	2,083 2.17%	189 0.20%	15,866 16.51%	4 0.00%	0 0.00%	0 0.00%	0 0.00%	96,128 100.00%
	26	Numbers Percent	0 0.00%	160 0.10%	1,277 0.79%	6,044 3.76%	162 0.10%	117,375 72.93%	4,047 2.51%	162 0.10%	31,725 19.71%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	160,952 100.00%
	27	Numbers Percent	9 0.05%	0 0.00%	116 0.65%	525 2.95%	15 0.08%	10,894 61.15%	644 3.62%	26 0.15%	5,585 31.35%	0 0.00%	0 0.00%	0 0.00%	0 0.00%	17,814 100.00%
	28	Numbers Percent	4 0.00%	282 0.32%	391 0.44%	1,478 1.67%	5 0.01%	42,626 48.18%	5,726 6.47%	65 0.07%	37,778 42.70%	0 0.00%	4 0.00%	0 0.00%	108 0.12%	88,467 100.00%
	29	Numbers Percent	21 0.12%	65 0.38%	53 0.31%	300 1.74%	35 0.20%	6,232 36.22%	2,547 14.80%	0 0.00%	7,892 45.87%	0 0.00%	47 0.27%	13 0.08%	1 0.01%	17,206 100.00%
	30	Numbers Percent	12 0.02%	36 0.06%	97 0.17%	842 1.48%	117 0.21%	17,005 29.92%	11,070 19.48%	7 0.01%	26,997 47.50%	0 0.00%	158 0.28%	489 0.86%	0 0.00%	56,830 100.00%
	31	Numbers Percent	0 0.00%	0 0.00%	6 0.17%	27 0.78%	34 0.98%	853 24.64%	836 24.15%	4 0.12%	1,678 48.47%	0 0.00%	12 0.35%	12 0.35%	0 0.00%	3,462 100.00%
	32	Numbers Percent	0 0.00%	5 0.18%	4 0.15%	16 0.59%	35 1.29%	492 18.10%	768 28.26%	0 0.00%	1,394 51.29%	0 0.00%	4 0.15%	0 0.00%	0 0.00%	2,718 100.00%

-Continued-

Table 26 (continued). Daily abundance of Black Lake sockeye salmon in the escapement, by age class, 1987.

Statistical Week	AGE GROUP													Total
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Other	
33 Numbers	0	2	1	3	6	77	148	0	260	0	0	0	0	497
Percent	0.00%	0.40%	0.20%	0.60%	1.21%	15.49%	29.78%	0.00%	52.31%	0.00%	0.00%	0.00%	0.00%	100.00%
34 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
35 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
36 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
37 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
38 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
39 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
40-41 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Numbers	46	635	4,539	19,985	594	383,309	30,846	1,066	147,274	149	225	514	109	589,291
Percent	0.01%	0.11%	0.77%	3.39%	0.10%	65.05%	5.23%	0.18%	24.99%	0.03%	0.04%	0.09%	0.02%	100.00%



Table 27. Daily abundance of Black Lake sockeye salmon in the catch, by age class, 1987.

Statistical Week	AGE GROUP													Total
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Other	
23 Numbers	0	0	9	34	0	507	19	3	92	0	0	0	0	664
Percent	0.00%	0.00%	1.36%	5.12%	0.00%	76.36%	2.86%	0.45%	13.86%	0.00%	0.00%	0.00%	0.00%	100.00%
24 Numbers	0	0	1,917	8,923	31	147,997	2,873	665	21,386	299	0	0	0	184,091
Percent	0.00%	0.00%	1.04%	4.85%	0.02%	80.39%	1.56%	0.36%	11.62%	0.16%	0.00%	0.00%	0.00%	100.00%
25 Numbers	0	181	4,442	17,133	773	348,817	10,261	938	67,569	82	0	0	0	450,196
Percent	0.00%	0.04%	0.99%	3.81%	0.17%	77.48%	2.28%	0.21%	15.01%	0.02%	0.00%	0.00%	0.00%	100.00%
26 Numbers	0	525	3,573	16,405	554	328,855	10,537	554	87,198	0	0	0	0	448,201
Percent	0.00%	0.12%	0.80%	3.66%	0.12%	73.37%	2.35%	0.12%	19.46%	0.00%	0.00%	0.00%	0.00%	100.00%
27 Numbers	233	0	3,296	14,526	497	313,267	18,957	853	167,477	0	0	0	0	519,106
Percent	0.04%	0.00%	0.63%	2.80%	0.10%	60.35%	3.65%	0.16%	32.26%	0.00%	0.00%	0.00%	0.00%	100.00%
28 Numbers	2	184	1,513	2,137	34	83,101	9,504	285	74,427	0	2	0	71	171,260
Percent	0.00%	0.11%	0.88%	1.25%	0.02%	48.52%	5.55%	0.17%	43.46%	0.00%	0.00%	0.00%	0.04%	100.00%
29 Numbers	188	620	413	2,553	227	48,818	15,696	0	55,345	0	266	39	23	124,188
Percent	0.15%	0.50%	0.33%	2.06%	0.18%	39.31%	12.64%	0.00%	44.57%	0.00%	0.21%	0.03%	0.02%	100.00%
30 Numbers	10	30	60	295	53	8,048	4,890	0	12,574	0	94	55	0	26,109
Percent	0.04%	0.11%	0.23%	1.13%	0.20%	30.82%	18.73%	0.00%	48.16%	0.00%	0.36%	0.21%	0.00%	100.00%
31 Numbers	0	6	41	177	224	5,507	5,301	38	10,697	0	75	74	0	22,140
Percent	0.00%	0.03%	0.19%	0.80%	1.01%	24.87%	23.94%	0.17%	48.32%	0.00%	0.34%	0.33%	0.00%	100.00%
32 Numbers	0	10	11	34	68	1,069	1,479	6	2,739	0	12	0	0	5,428
Percent	0.00%	0.18%	0.20%	0.63%	1.25%	19.69%	27.25%	0.11%	50.46%	0.00%	0.22%	0.00%	0.00%	100.00%

-Continued-

Table 27 (continued). Daily abundance of Black Lake sockeye salmon in the catch, by age class, 1987.

Statistical Week	AGE GROUP													Total
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Other	
33 Numbers	0	1	1	3	6	63	122	0	215	0	0	0	0	411
Percent	0.00%	0.24%	0.24%	0.73%	1.46%	15.33%	29.68%	0.00%	52.31%	0.00%	0.00%	0.00%	0.00%	100.00%
34 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
35 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
36 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
37 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
38 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
39 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
40-41 Numbers	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Numbers	433	1,557	15,276	62,220	2,467	1,286,049	79,639	3,342	499,719	381	449	168	94	1,951,794
Percent	0.02%	0.08%	0.78%	3.19%	0.13%	65.89%	4.08%	0.17%	25.60%	0.02%	0.02%	0.01%	0.00%	100.00%

Table 28. Daily abundance of Chignik Lake sockeye salmon in the escapement, by age class, 1987.

Statistical Week	-----AGE GROUP-----													
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Other	Total
23 Numbers	0	0	17	62	0	0	34	6	347	0	0	0	0	466
Percent	0.00%	0.00%	3.65%	13.30%	0.00%	0.00%	7.30%	1.29%	74.46%	0.00%	0.00%	0.00%	0.00%	100.00%
24 Numbers	0	0	144	637	0	1,208	235	52	3,181	17	0	0	0	5,474
Percent	0.00%	0.00%	2.63%	11.64%	0.00%	22.07%	4.29%	0.95%	58.11%	0.31%	0.00%	0.00%	0.00%	100.00%
25 Numbers	0	11	101	399	20	2,777	240	21	3,228	0	0	0	0	6,797
Percent	0.00%	0.16%	1.49%	5.87%	0.29%	40.86%	3.53%	0.31%	47.49%	0.00%	0.00%	0.00%	0.00%	100.00%
26 Numbers	0	13	107	509	14	7,230	338	14	3,457	0	0	0	0	11,682
Percent	0.00%	0.11%	0.92%	4.36%	0.12%	61.89%	2.89%	0.12%	29.59%	0.00%	0.00%	0.00%	0.00%	100.00%
27 Numbers	0	0	9	31	0	888	42	1	243	0	0	0	0	1,214
Percent	0.00%	0.00%	0.74%	2.55%	0.00%	73.15%	3.46%	0.08%	20.02%	0.00%	0.00%	0.00%	0.00%	100.00%
28 Numbers	1	47	52	232	1	6,379	881	8	5,734	0	1	0	17	13,353
Percent	0.01%	0.35%	0.39%	1.74%	0.01%	47.77%	6.60%	0.06%	42.94%	0.00%	0.01%	0.00%	0.13%	100.00%
29 Numbers	11	34	31	163	19	2,970	1,470	0	5,102	0	26	8	0	9,834
Percent	0.11%	0.35%	0.32%	1.66%	0.19%	30.20%	14.95%	0.00%	51.88%	0.00%	0.26%	0.08%	0.00%	100.00%
30 Numbers	10	33	104	1,122	154	18,611	13,854	14	36,857	0	174	756	0	71,689
Percent	0.01%	0.05%	0.15%	1.57%	0.21%	25.96%	19.33%	0.02%	51.41%	0.00%	0.24%	1.05%	0.00%	100.00%
31 Numbers	0	7	21	88	124	2,499	2,844	19	6,417	0	38	31	0	12,088
Percent	0.00%	0.06%	0.17%	0.73%	1.03%	20.67%	23.53%	0.16%	53.09%	0.00%	0.31%	0.26%	0.00%	100.00%
32 Numbers	0	77	61	188	364	4,555	8,120	23	16,375	0	44	0	0	29,807
Percent	0.00%	0.26%	0.20%	0.63%	1.22%	15.28%	27.24%	0.08%	54.94%	0.00%	0.15%	0.00%	0.00%	100.00%

-Continued-

Table 28 (continued). Daily abundance of Chignik Lake sockeye salmon in the escapement, by age class, 1987.

Statistical Week	AGE GROUP													
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Other	Total
33 Numbers	0	75	51	190	358	3,151	6,863	4	14,859	9	9	0	0	25,569
Percent	0.00%	0.29%	0.20%	0.74%	1.40%	12.32%	26.84%	0.02%	58.11%	0.04%	0.04%	0.00%	0.00%	100.00%
34 Numbers	0	5	14	70	131	1,240	1,669	0	6,383	12	0	0	0	9,524
Percent	0.00%	0.05%	0.15%	0.73%	1.38%	13.02%	17.52%	0.00%	67.02%	0.13%	0.00%	0.00%	0.00%	100.00%
35 Numbers	0	0	1	4	7	884	487	0	3,203	1	0	0	0	4,587
Percent	0.00%	0.00%	0.02%	0.09%	0.15%	19.27%	10.62%	0.00%	69.83%	0.02%	0.00%	0.00%	0.00%	100.00%
36 Numbers	0	0	0	0	0	823	411	0	2,877	0	0	0	0	4,111
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	20.02%	10.00%	0.00%	69.98%	0.00%	0.00%	0.00%	0.00%	100.00%
37 Numbers	0	0	0	0	0	590	296	0	2,070	0	0	0	0	2,956
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	19.96%	10.01%	0.00%	70.03%	0.00%	0.00%	0.00%	0.00%	100.00%
38 Numbers	0	0	0	0	0	330	165	0	1,154	0	0	0	0	1,649
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	20.01%	10.01%	0.00%	69.98%	0.00%	0.00%	0.00%	0.00%	100.00%
39 Numbers	0	0	0	0	0	170	85	0	596	0	0	0	0	851
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	19.98%	9.99%	0.00%	70.04%	0.00%	0.00%	0.00%	0.00%	100.00%
40-41 Numbers	0	0	0	0	0	560	280	0	1,961	0	0	0	0	2,801
Percent	0.00%	0.00%	0.00%	0.00%	0.00%	19.99%	10.00%	0.00%	70.01%	0.00%	0.00%	0.00%	0.00%	100.00%
Total Numbers	22	302	713	3,695	1,192	54,865	38,314	162	114,044	39	292	795	17	214,452
Percent	0.01%	0.14%	0.33%	1.72%	0.56%	25.58%	17.87%	0.08%	53.18%	0.02%	0.14%	0.37%	0.01%	100.00%

Table 29. Daily abundance of Chignik Lake sockeye salmon in the catch, by age class, 1987.

Statistical Week	AGE GROUP													
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Other	Total
23 Numbers	0	0	1	2	0	0	1	0	11	0	0	0	0	15
Percent	0.00%	0.00%	6.67%	13.33%	0.00%	0.00%	6.67%	0.00%	73.33%	0.00%	0.00%	0.00%	0.00%	100.00%
24 Numbers	0	0	248	1,156	4	2,739	372	86	5,730	38	0	0	0	10,373
Percent	0.00%	0.00%	2.39%	11.14%	0.04%	26.41%	3.59%	0.83%	55.24%	0.37%	0.00%	0.00%	0.00%	100.00%
25 Numbers	0	20	523	2,022	92	9,624	1,205	113	15,108	11	0	0	0	28,718
Percent	0.00%	0.07%	1.82%	7.04%	0.32%	33.51%	4.20%	0.39%	52.61%	0.04%	0.00%	0.00%	0.00%	100.00%
26 Numbers	0	54	328	1,479	58	19,734	918	58	10,947	0	0	0	0	33,576
Percent	0.00%	0.16%	0.98%	4.40%	0.17%	58.77%	2.73%	0.17%	32.60%	0.00%	0.00%	0.00%	0.00%	100.00%
27 Numbers	15	0	209	903	33	26,367	1,215	57	7,008	0	0	0	0	35,807
Percent	0.04%	0.00%	0.58%	2.52%	0.09%	73.64%	3.39%	0.16%	19.57%	0.00%	0.00%	0.00%	0.00%	100.00%
28 Numbers	0	32	112	239	2	8,404	977	21	6,696	0	0	0	12	16,495
Percent	0.00%	0.19%	0.68%	1.45%	0.01%	50.95%	5.92%	0.13%	40.59%	0.00%	0.00%	0.00%	0.07%	100.00%
29 Numbers	74	235	168	993	95	16,264	6,639	0	26,326	0	115	21	6	50,936
Percent	0.15%	0.46%	0.33%	1.95%	0.19%	31.93%	13.03%	0.00%	51.68%	0.00%	0.23%	0.04%	0.01%	100.00%
30 Numbers	9	28	60	293	53	7,059	4,852	1	13,826	0	90	63	0	26,334
Percent	0.03%	0.11%	0.23%	1.11%	0.20%	26.81%	18.42%	0.00%	52.50%	0.00%	0.34%	0.24%	0.00%	100.00%
31 Numbers	0	22	133	534	740	15,514	17,207	122	39,113	0	243	191	0	73,819
Percent	0.00%	0.03%	0.18%	0.72%	1.00%	21.02%	23.31%	0.17%	52.99%	0.00%	0.33%	0.26%	0.00%	100.00%

-Continued-

Table 29 (continued). Daily abundance of Chignik Lake sockeye salmon in the catch, by age class, 1987.

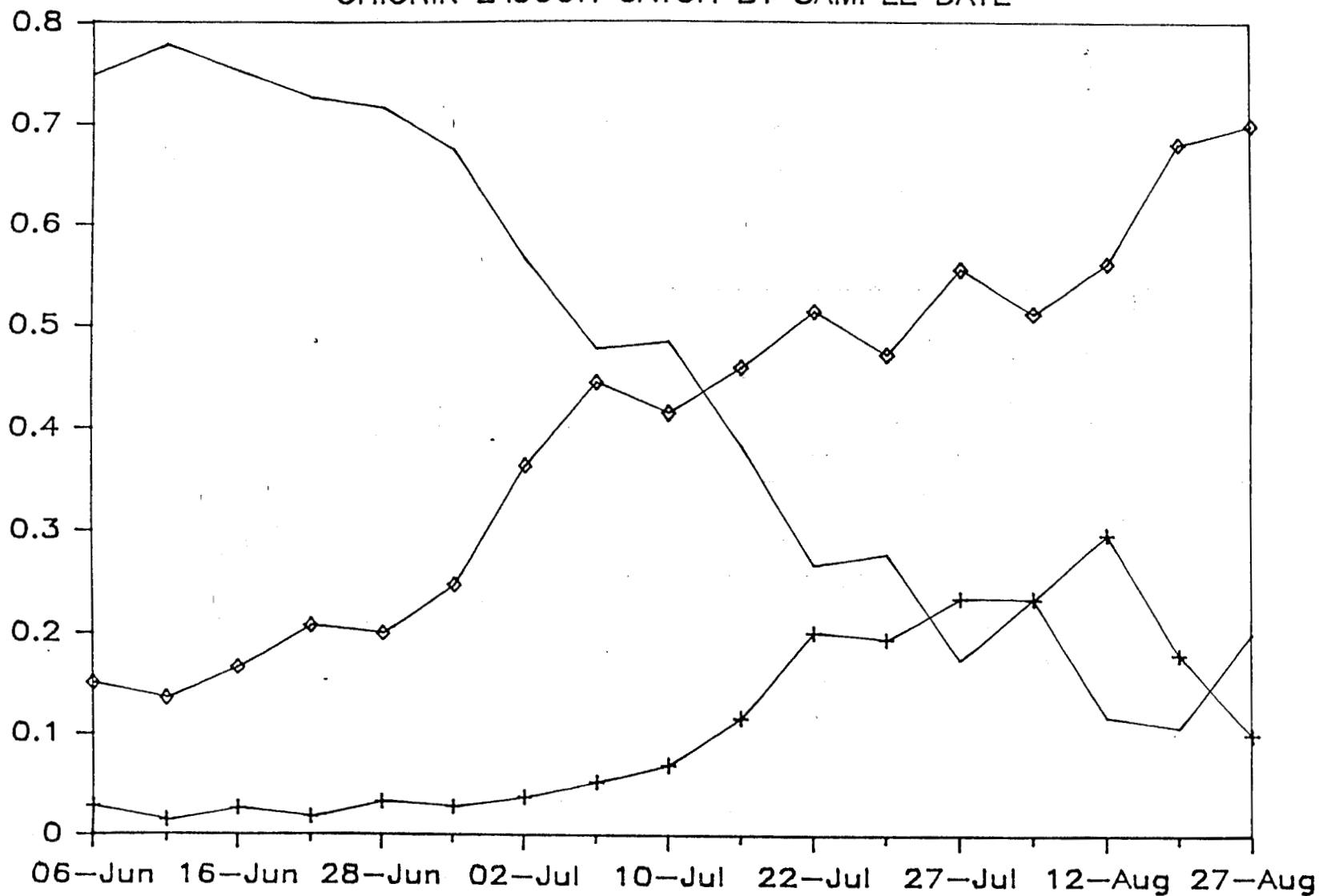
Statistical Week		AGE GROUP													Total
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Other	
32	Numbers	0	80	82	242	486	6,805	10,739	40	22,258	0	83	0	0	40,815
	Percent	0.00%	0.20%	0.20%	0.59%	1.19%	16.67%	26.31%	0.10%	54.53%	0.00%	0.20%	0.00%	0.00%	100.00%
33	Numbers	0	141	83	300	559	4,966	11,606	4	23,694	9	7	0	0	41,369
	Percent	0.00%	0.34%	0.20%	0.73%	1.35%	12.00%	28.05%	0.01%	57.27%	0.02%	0.02%	0.00%	0.00%	100.00%
34	Numbers	0	0	47	228	436	3,337	4,564	0	18,697	46	0	0	0	27,355
	Percent	0.00%	0.00%	0.17%	0.83%	1.59%	12.20%	16.68%	0.00%	68.35%	0.17%	0.00%	0.00%	0.00%	100.00%
35	Numbers	0	0	8	39	74	6,117	3,547	0	22,596	8	0	0	0	32,389
	Percent	0.00%	0.00%	0.02%	0.12%	0.23%	18.89%	10.95%	0.00%	69.76%	0.02%	0.00%	0.00%	0.00%	100.00%
36	Numbers	0	0	0	0	0	4,567	2,284	0	15,988	0	0	0	0	22,839
	Percent	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	10.00%	0.00%	70.00%	0.00%	0.00%	0.00%	0.00%	100.00%
37	Numbers	0	0	0	0	0	3,918	1,958	0	13,715	0	0	0	0	19,591
	Percent	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	9.99%	0.00%	70.01%	0.00%	0.00%	0.00%	0.00%	100.00%
38	Numbers	0	0	0	0	0	2,569	1,284	0	8,997	0	0	0	0	12,850
	Percent	0.00%	0.00%	0.00%	0.00%	0.00%	19.99%	9.99%	0.00%	70.02%	0.00%	0.00%	0.00%	0.00%	100.00%
39	Numbers	0	0	0	0	0	1,297	647	0	4,536	0	0	0	0	6,480
	Percent	0.00%	0.00%	0.00%	0.00%	0.00%	20.02%	9.98%	0.00%	70.00%	0.00%	0.00%	0.00%	0.00%	100.00%
40-41	Numbers	0	0	0	0	0	323	161	0	1,131	0	0	0	0	1,615
	Percent	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	9.97%	0.00%	70.03%	0.00%	0.00%	0.00%	0.00%	100.00%
Total	Numbers	98	612	2,002	8,430	2,632	139,604	70,176	502	256,377	112	538	275	18	481,376
	Percent	0.02%	0.13%	0.42%	1.75%	0.55%	29.00%	14.58%	0.10%	53.26%	0.02%	0.11%	0.06%	0.00%	100.00%

Table 30. Summary of the escapement, commercial catch and total run by age class and stock for the 1987 Chignik Lakes sockeye salmon run, estimated by scale pattern analysis.

	AGE GROUP													Total
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Other	
<u>Black Lake</u>														
Escapement	46	635	4,539	19,985	594	383,309	30,846	1,066	147,274	149	225	514	109	589,291
Percent	0.01%	0.11%	0.77%	3.39%	0.10%	65.05%	5.23%	0.18%	24.99%	0.03%	0.04%	0.09%	0.02%	100.00%
Catch	433	1,557	15,276	62,220	2,467	1,286,049	79,639	3,342	499,719	381	449	168	94	1,951,794
Percent	0.02%	0.08%	0.78%	3.19%	0.13%	65.89%	4.08%	0.17%	25.60%	0.02%	0.02%	0.01%	0.00%	100.00%
<u>Chignik Lake</u>														
Escapement	22	302	713	3,695	1,192	54,865	38,314	162	114,044	39	292	795	17	214,452
Percent	0.01%	0.14%	0.33%	1.72%	0.56%	25.59%	17.87%	0.08%	53.18%	0.02%	0.14%	0.37%	0.01%	100.00%
Catch	98	612	2,002	8,430	2,632	139,604	70,176	502	256,377	112	538	275	18	481,376
Percent	0.02%	0.13%	0.42%	1.75%	0.55%	29.00%	14.58%	0.10%	53.26%	0.02%	0.11%	0.06%	0.00%	100.00%
<u>Total Run</u>														
Number	599	3,106	22,530	94,330	6,885	1,863,827	218,975	5,072	1,017,414	681	1,504	1,752	238	3,236,913
Percent	0.02%	0.10%	0.70%	2.91%	0.21%	57.58%	6.76%	0.16%	31.43%	0.02%	0.05%	0.05%	0.01%	100.00%

# 1987 SOCKEYE AGE COMPOSITION

CHIGNIK LAGOON CATCH BY SAMPLE DATE



— AGED 1.3

+ AGED 2.2

◇ AGED 2.3

Figure 12. Chignik Sockeye age composition by day.



Table 31. Prices paid fishermen for salmon in 1987 based on fish ticket data. (Chignik area only)

Specie	No. Caught	Average Weight Per Fish	Total Pounds Delivered	Price Range	Average Price	Dollar Value
Chinook	2,651	18.67	49,482	\$0.91-1.89	\$1.47	\$72,700
Sockeye	1,898,838	7.37	14,001,714	1.50-2.21	1.77	24,783,000
Coho	150,414	7.91	1,189,803	0.79-1.10	0.87	1,035,100
Pink	246,775	3.65	899,560	0.08-0.33	0.30	269,900
Chum	127,261	7.42	943,941	0.07-0.41	0.36	339,800

Estimated Value to Chignik Fishermen \$26,500,000

Estimated Value per Vessel \$260,000

Table 32. Economic value of salmon to Chignik area fishermen, 1970-1987.

YEAR		CHINOOK	SOCKEYE	COHOS	PINKS	CHUMS	TOTAL
1970		6,129	2,190,272	18,397	635,673	376,025	\$3,226,496
	AVG./BOAT	89	31,743	267	9,213	5,450	\$46,762
1971		6,472	2,034,279	23,240	366,693	326,760	\$2,757,444
	AVG./BOAT	84	26,419	302	4,762	4,244	\$35,811
1972		2,028	825,498	35,699	48,401	87,759	\$99,385
	AVG./BOAT	28	11,308	489	663	1,202	\$13,690
1973		5,255	3,030,057	73,663	20,610	10,180	\$3,139,765
	AVG./BOAT	72	41,508	1,009	282	139	\$43,019
1974		2,941	3,618,781	31,933	64,069	51,125	\$3,768,849
	AVG./BOAT	32	39,767	351	704	562	\$41,416
1975		6,561	1,384,271	213,539	104,115	61,704	\$1,770,190
	AVG./BOAT	76	16,240	2,581	12,211	717	\$20,825
1976		13,800	4,751,000	138,000	568,300	183,600	\$5,654,700
	AVG./BOAT	179	61,701	1,792	7,381	2,384	\$73,437
1977		18,828	14,553,720	104,819	920,881	368,066	\$15,966,314
	AVG./BOAT	212	163,525	1,178	10,347	4,136	\$179,398
1978		56,700	15,653,500	116,400	1,131,500	404,500	\$17,362,600
	AVG./BOAT	597	164,774	1,225	11,911	4,258	\$182,765
1979		32,050	11,345,503	710,192	2,622,269	126,866	\$14,836,880
	AVG./BOAT	317	112,332	7,031	25,963	1,256	\$146,899
1980		67,657	5,532,290	520,655	1,477,060	1,061,963	\$8,659,625
	AVG./BOAT	670	54,775	5,155	14,624	10,514	\$85,738
1981		75,231	17,262,119	439,900	1,881,334	2,431,421	\$22,090,005
	AVG./BOAT	730	167,593	4,271	18,265	23,606	\$214,465
1982		75,276	13,038,510	1,782,027	578,184	1,356,597	\$16,830,594
	AVG./BOAT	717	124,176	16,972	5,506	12,920	\$160,291
1983		96,159	10,728,038	219,650	240,171	421,713	\$11,705,781
	AVG./BOAT	962	107,281	2,197	2,402	4,217	\$117,059
1984		114,502	20,402,076	759,972	330,916	146,024	\$21,753,490
	AVG./BOAT	1,134	202,000	7,525	3,276	1,446	\$215,381

-Continued-

Table 32 (continued). Economic value of salmon to Chignik area fishermen, 1970-1987.

YEAR	CHINOOK	SOCKEYE	COHOS	PINKS	CHUMS	TOTAL
1985	67,088	7,997,834	1,471,418	140,076	59,475	\$8,735,891
AVG./BOAT	664	79,186	14,568	1,387	589	\$96,394
1986	84,800	16,832,290	667,740	356,147	456,546	\$18,447,523
AVG./BOAT	848	168,823	6,677	3,562	4,565	\$184,475
1987	72,739	24,783,033	1,035,129	269,868	339,819	\$26,500,588
AVG./BOAT	706	240,612	10,050	2,620	3,299	\$259,810

# ECONOMIC VALUE OF SALMON 1987

## TO CHIGNIK AREA FISHERMEN

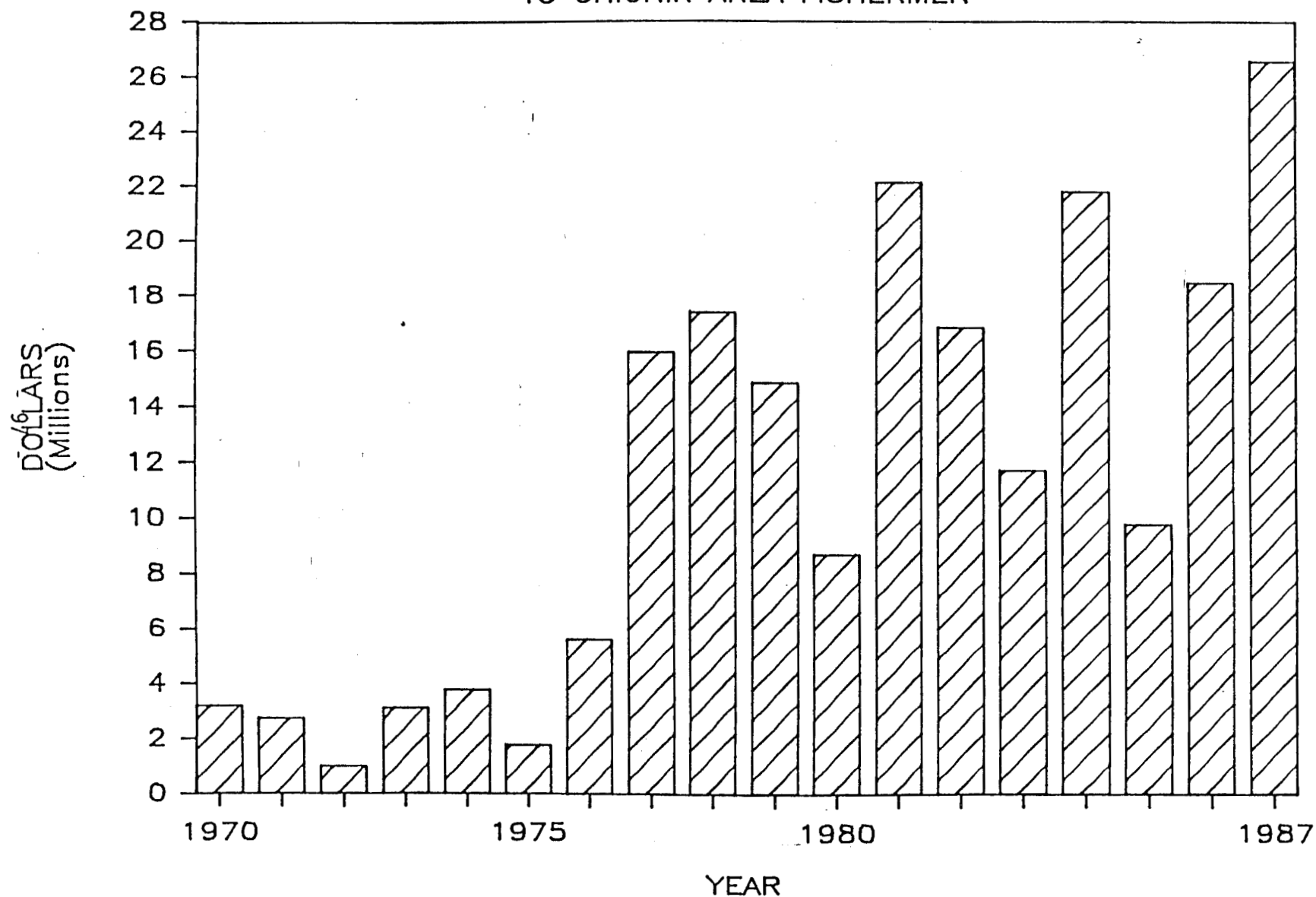


Figure 13. Economic value of salmon to Chignik Area fishermen, 1970-1987.

# AVERAGE ECONOMIC VALUE OF SALMON

PER PERMIT HOLDER 1987

102

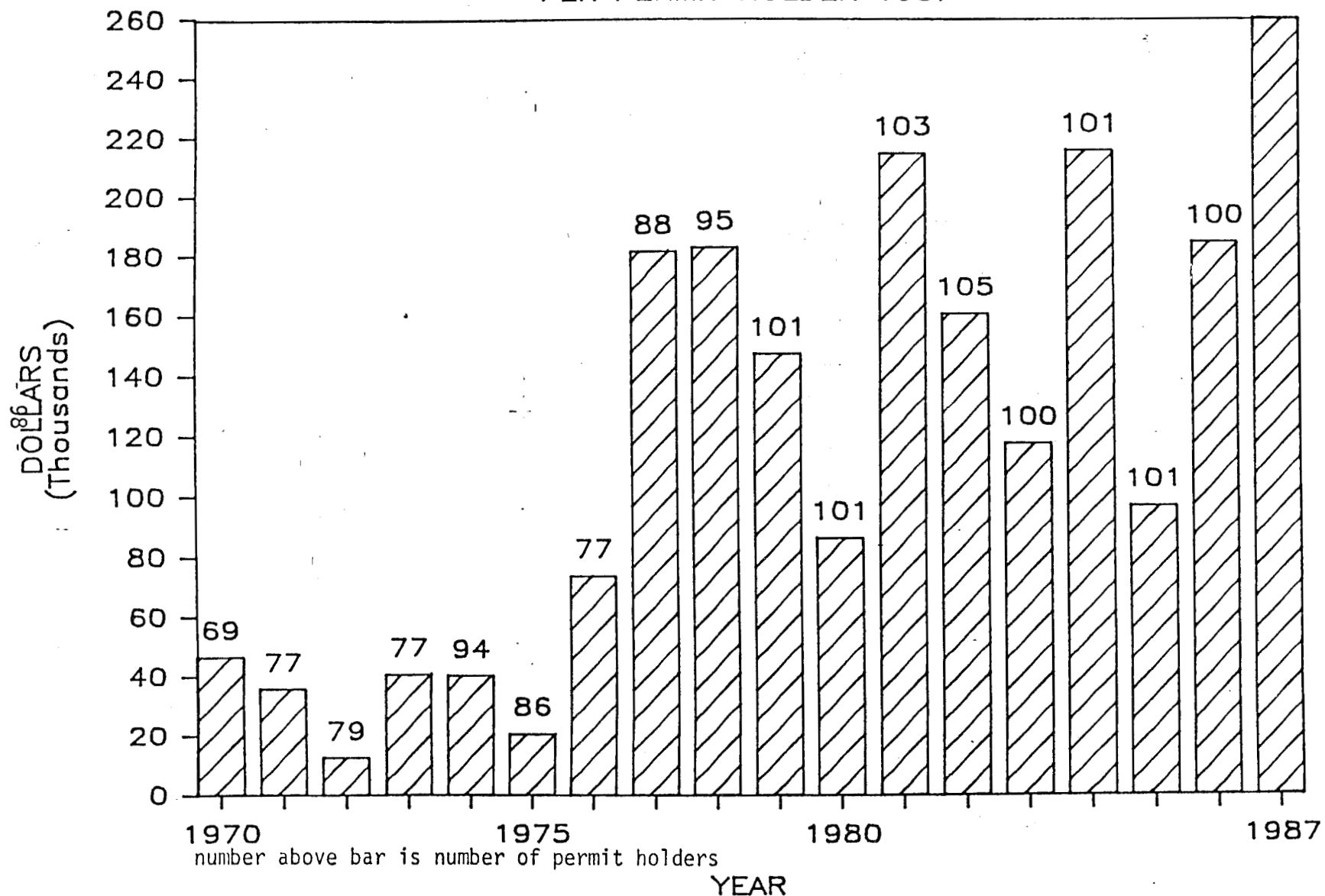


Figure 14. Average value per permit holder, 1970-1987.

Table 33. Estimated value of bottomfish to fishermen for 1987 in the Chignik area.

SPECIES	WEIGHT ROUND POUNDS	PRICE PER POUND	DOLLAR VALUE
BLACK ROCKFISH	293	0.66	\$190
DUSKY ROCKFISH	15,407	0.20	3,080
FLOUNDER	4,377	0.09	390
PACIFIC COD	226,865	0.19	43,100
RED SNAPPER	11,890	0.47	5,580
SABLEFISH	537,590	1.01	542,970
THORYHEAD ROCKFISH	18,465	0.74	13,665
WHITING POLLACK	39,353	0.06	2,360
YELLOW EYE ROCKFISH	1,483	0.25	370
TOTAL	855,723		\$611,700

Table 34. Chignik area subsistence harvests, 1976-1987.

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1976	100	6,000	1,500	500	150	8,250
1977	50	9,700	2,400	1,800	600	14,550
1978	50	6,000	500	2,100	600	9,250
1979	14	7,750	34	262	0	8,060
1980	9	7,831	27	400	141	8,408
1981	100	5,840	0	0	0	5,940
1982	2	2,320	8	1	0	2,331
1983	0	3,438	1,880	1,680	1,136	8,134
1984	26	8,222	553	403	247	9,451
1985	1	7,615	60	32	0	7,708
1986	6	10,356	261	121	95	10,839
1987	10	7,021	278	204	261	7,774
Average	31	6,841	625	625	269	8,391

Table 35. List of 1987 salmon vessel operators  
in the Chignik area.

NAME		PERMIT NO.	RESIDENCY	ADF&G NO.
LAST	FIRST			
ALECK	NICK	S01L56935 J	R	21611
ALEXANDER	JASON	S01L59000 W	R	21757
ANDERSON	AL	S01L57160 U	R	50763
ANDERSON	DAVID	S01L56415 U	R	32397
ANDERSON	DEAN	S01L60114 M	R	37252
ANDERSON	EUGENE	S01L60601 G	R	31492
ANDERSON	GUNNAR	S01L56589 I	R	49655
ANDERSON	H.	S01L57501 K	R	21869
ANDERSON	HAROLD	S01L57133 E	R	33375
ANDERSON	JULIUS	S01L55433 H	R	41205
ANDERSON	MARVIN	S01L58425 P	R	14802
ANDERSON	NEIL	S01L58578 P	R	1873
ANDERSON	RODNEY	S01L56936 B	R	118
ANDERSON	RONALD	S01L58818 F	R	32685
BATTISHILL	FRANK	S01L50045 K	R	117
BECK	MARK	S01L55925 M	NR	44149
BECKER	CARL	S01L57469 C	R	51091
BRANDAL	ALEC	S01L55170 U	R	32586
BRANDAL	HENRY	S01L50032 K	R	50946
BUMPUS	DONALD	S01L61910 L	R	21870
CAMPBELL	ANGUS	S01L55731 X	R	11013
CARLSON	AXEL	S01L57612 J	R	35863
CARLSON	BERNARD	S01L50220 U	R	30680
CARLSON	CARL	S01L56192 Z	R	21898
CARLSON	DALE	S01L57473 V	R	43370
CARLSON	ERIC	S01L62210 Z	R	21972
CARLSON	ERNEST	S01L57125 P	R	43775
CARLSON	EUGENE	S01L55520 P	R	36054
CARLSON	RODERICK	S01L57704 F	R	37779
CARLSON	RUDY	S01L63976 A	R	22017
CARROLL	ALBERT	S01L60106 Z	NR	33957
CONSTANTINE	JOHNNY	S01L57808 I	R	15888
CRONK	MILTON	S01L58603 C	NR	38635
ENDRESEN	ANDY	S01L60183 F	R	40795
ERICKSON	CLARENCE	S01L56512 B	R	53266
GREGORIO	TONY	S01L58848 X	R	37548
GRUNERT	CLEMENS	S01L50027 Z	R	42335
GRUNERT	FRANK	S01L59851 X	R	32424
GRUNERT	MICHAEL	S01L55935 K	R	51094
HARRIS	GEORGE	S01L55938 M	NR	6727
HINDERER	WALLACE	S01L57085 S	R	41592
JOHNSON	PAUL	S01L56395 S	NR	35956

-Continued-



Table 35 (continued). List of 1987 salmon vessel operators in the Chignik area.

NAME		PERMIT NO.	RESIDENCY	ADF&G NO.
LAST	FIRST			
JONES	MORRIS	S01L56405 W	NR	6728
KALMAKOFF	ANDY	S01L61370 V	R	38182
KALMAKOFF	ARTEMIE	S01L50090 M	R	9266
KALMAKOFF	GUSTIA	S01L50123 N	R	21554
KALMAKOFF	HARRY	S01L60115 F	R	6923
KALMAKOFF	JOSEPH	S01L60614 G	R	6170
KALMAKOFF	PETER	S01L58077 F	R	14805
KASHEVAROF	WILLIAM	S01L57487 N	R	43125
KOPUN	ALOYS	S01L57863 I	R	45995
KOSBRUK	BORIS	S01L58206 U	R	21899
KOSBRUK	HARRY	S01L56726 L	R	38528
KOSBRUK	IGNATIUS	S01L50116 R	R	45060
KULIN	STEPHEN	S01L60113 U	R	52757
LIND	ELLIOT	S01L56872 O	R	35950
LIND	JOHNNY	S01L50223 W	R	38404
LIND	LARRY	S01L57376 O	R	10567
LIND	WILLIAM	S01L57384 C	R	111
MCCALLUM	CHARLES	S01L55399 O	NR	29006
MCKILLY	GABRIEL	S01L59493 O	R	32863
MINAKER	HARRY	S01L56203 U	NR	33848
MUNSON	HENRY	S01L59794 I	R	41317
NOONAN	MICHAEL	S01L58322 F	R	23411
ODOMIN	NICK	S01L57696 L	R	195
OGLE	LEONARD	S01L55311 R	R	40484
OLSEN	KNUD	S01L56418 W	NR	11034
ORLOFF	GEORGE	S01L59308 M	R	21612
PEDERSEN	ALEC	S01L57695 S	R	51282
PEDERSEN	ALEC	S01L64188 M	R	34198
PEDERSEN	ALVIN	S01L55953 V	R	37662
PEDERSEN	ARTHUR	S01L55954 N	R	48823
PEDERSEN	AUGUST	S01L50039 H	R	43200
PEDERSEN	HANS	S01L57171 K	R	40248
PEDERSEN	MARIUS	S01L64187 U	R	6421
PEDERSON	AUGUST	S01L58126 H	R	28396
PHILLIPS	ELIA	S01L50332 L	R	36497
SHANGIN	ANDY	S01L58145 K	R	39351
SHANGIN	CLEMENT	S01L56733 H	R	38622
SHANGIN	DENNIS	S01L58178 G	R	9282
SHANGIN	RUSSELL	S01L57003 B	R	36242
SIEMION	MATTHEW	S01L56992 S	NR	32361
SIEMION	THEODORE	S01L56322 H	NR	20453
SKONBERG	BERNARD	S01L55477 R	R	33858

-Continued-

Table 35 (continued). List of 1987 salmon vessel operators in the Chignik area.

NAME		PERMIT NO.	RESIDENCY	ADF&G NO.
LAST	FIRST			
SKONBERG	CALVIN	S01L56228 C	R	34184
SKONBERG	DARRELL	S01L55546 P	R	33614
SKONBERG	GUY	S01L55361 H	R	35698
SKONBERG	RALPH	S01L50205 L	R	6444
SKONBERG	ROY	S01L58470 R	R	42210
STEPANOFF	ANDREW	S01L60144 G	R	194
STEPANOFF	OLEANA	S01L58308 N	R	7143
STEPANOFF	SAM	S01L50338 P	R	14802
STEPANOFF	WALTER	S01L57091 W	R	11045
SUYDAM	FLOYD	S01L56680 K	R	39962
SUYDAM	GLENN	S01L59615 J	R	48805
TAKAK	AFONIE	S01L57035 F	R	34970
TEUBER	PAUL	S01L60121 I	NR	32320
THIELE	REINHOLD	S01L58496 R	R	21877
VANWINGERDEN	MARK	S01L57296 B	R	37231
VEERHUSEN	DANIEL	S01L57662 X	NR	31166
YAGIE	JERRY	S01L56797 N	R	36296
YAGIE	MARVIN	S01L57278 P	R	34902

Table 36. Chignik area effort in units of seine gear fished, 1966-1987.

YEAR	RESIDENT	PERCENT	NON-RESIDENT	PERCENT	TOTAL
1966	65	89.0%	8	11.0%	73
1967	73	88.0%	10	12.0%	83
1968	59	88.1%	8	11.9%	67
1969	57	83.8%	11	16.2%	68
1970	57	82.6%	12	17.4%	69
1971	64	83.1%	13	16.9%	77
1972	62	78.5%	17	21.5%	79
1973	63	81.8%	14	18.2%	77
1974	79	84.0%	15	16.0%	94
1975	72	83.7%	14	16.3%	86
1976	66	85.7%	11	14.3%	77
1977	74	84.1%	14	15.9%	88
1978	82	86.3%	13	13.7%	95
1979	87	86.1%	14	13.9%	101
1980	87	86.1%	14	13.9%	101
1981	87	84.5%	16	15.5%	103
1982	89	84.8%	16	15.2%	105
1983	84	84.0%	16	16.0%	100
1984	84	83.2%	17	16.8%	101
1985	85	84.2%	16	15.8%	101
1986	87	87.0%	13	13.0%	100
1987	89	87.3%	13	12.7%	102

Table 37. List of Chignik area processors.

F0213 Alaska Pacific Seafoods P.O. Box 31179 Seattle, WA 98103	F0126 Crusader Fisheries, Inc. P.O. Box 692 Kodiak, AK 99615
F0400 Alaskan Fishery Company -- Alaskan I 333 W. 4th, Suite 300 Anchorage, AK 99501	F0266 Columbia Ward Fisheries-Alitak P.O. Box C-5030 Seattle, WA 98105-0030
F0622 Aleutian Dragon Fisheries 5355 28th Ave. N.W. Seattle, WA 98107	F0265 Columbia Ward Fisheries - Chignik P.O. Box C-5050 University Station Seattle, WA 98105-0030
F0222 All Alaskan Seafoods 130 Nickerson St., Suite 307 Seattle, WA	F0021 International Seafoods of Alaska P.O. Box 2997 Kodiak, AK 99615
F0365 Chignik Pride Fisheries 4241 21 Ave. W., Suite 300 Seattle, WA 98199	F0940 Trident Seafood Corp. - Sand Point 5303 Shilshole Ave. N.W. Seattle, WA 98107
F0213 Chugach Ak. Fisheries, Inc. 4241 21st Ave. W #204 Seattle, WA 98199	F0320 Western Pride Fisheries 1111 34d. Ave., Suite 1210 Seattle, WA 98101

Table 38. Chignik area 1987 stream surveys, Black Lake tributaries.

STREAM NAME	STREAM NUMBER	DATE SURVEYED	PINK	CHUM	SOCKEYE	OBSERVER	REMARKS
BEARSKIN.....	271-103A		-	-	-		Did not survey
WESTFORK.....	271-103A		-	-	-		Did not survey
ALEC RIVER.....	271-103A	7/22/87	-	-	55,000	NICHOLSON	Good survey conditions
ALEC RIVER.....	271-103A	8/6/87	-	-	88,400	PROBASCO	Excellent survey conditions
MILK CREEK.....	271-103A	7/22/87	-	-	600	NICHOLSON	Excellent survey conditions
MILK CREEK.....	271-103A	8/6/87	-	-	12,200	PROBASCO	Excellent survey conditions
CATHEDRAL CREEK.....	271-103A	8/6/87	-	-	100	PROBASCO	Excellent survey conditions
BOULEVARD CREEK.....	271-103A	7/22/87	-	-	29,000	NICHOLSON	Good survey conditions
BOULEVARD CREEK.....	271-103A	8/6/87	-	-	133,000	PROBASCO	Fish stacked up
BROAD CREEK.....	271-103A	7/22/87	-	-	32,500	NICHOLSON	Good survey conditions
BROAD CREEK.....	271-103A	8/6/87	-	-	26,000	PROBASCO	Excellent survey conditions
FAN CREEK.....	271-103A	7/22/87	-	-	25,000	NICHOLSON	Excellent survey conditions
FAN CREEK.....	271-103A	8/6/86	-	-	52,000	PROBASCO	Excellent survey conditions
CHIAKTUAK.....	271-103A	8/6/87	-	-	1,000	PROBASCO	Excellent survey conditions
CONGLOMERATE CREEK..	271-103A	8/6/87	-	-	3,900	PROBASCO	Excellent survey conditions
SPRING AREA BETWEEN CONGLOMERATE AND							
BROAD CREEK.....	271-103A	7/22/87	-	-	7,500	NICHOLSON	2,200 next to big spring
	271-103A	8/6/87	-	-	42,000	PROBASCO	Excellent survey conditions
TOTAL					508,200		

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					Species						
Chignik Bay	271 -102 B	Mallard Bay	13-Aug	Excel.	0	0	0	0	100	Probasco	Approx. 6800 chum in bay
	271 -102 C	Mud Bay	13-Aug	Good	0	300	0	0	0	Probasco	Sockeye counted in Lake
	271 -104	Alfred	Not Surveyed								
	271 -105	Dago Frank	Not Surveyed								
	271 -106	Neketa	Not Surveyed								
Central	272 -201	unnamed	Not Surveyed								
	272 -202 A	unnamed	Not Surveyed								
	272 -204	Thompson Valley	Not Surveyed								
	272 -205	McKinsey	Not Surveyed								
	272 -206	Dry	Not Surveyed								
	272 -302	Hook Bay	31-Jul	Excel.	0	0	0	200	50	Fox	

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					-----Species-----						
Central	272 -302		10-Aug	Fair	0	0	0	200	0	Probasco	Poor visibility in bay
	272 -302		21-Aug	Excel.	0	20	0	2600	50	Fox	Approx. 1300 pinks in bay
	272 -302		31-Aug	Excel.	0	150	0	7850	200	Probasco	
	272 -501	Cape Kumliun	20-Jul	Excel.	0	0	0	0	0	Wright	Approx. 2500 fish along beach north of mouth
	272 -501		22-Jul	Poor	0	0	0	0	25	Nicholson	
	272 -501		30-Jul	Good	0	0	0	0	250	Fox	Approx. 300 chum at mouth; 100 pinks in bay
	272 -501		31-Jul	Excel.	0	0	0	200	300	Fox	Approx. 500 chum at mouth; 16000 pinks in bay
	272 -501		10-Aug	Good	0	0	0	1000	0	Probasco	Poor visibility in bay due to fog
	272 -501		12-Aug	Fair	0	0	0	2500	0	Staak	Approx. 3000 pinks at mouth
	272 -501		21-Aug	Excel.	0	0	0	46900	0	Fox	Approx. 71000 pinks in bay
	272 -502	Waterfall	Not Surveyed								
	272 -503	unnamed	Not Surveyed								
	272 -504	unnamed	20-Jul	Excel.	0	0	0	0	0	Wright	Approx. 100 fish at mouth
	272 -505	Bear	20-Jul	Excel.	0	0	0	0	0	Wright	Approx. 3000 chum in bay
	272 -505		22-Jul	Poor	0	0	0	0	300	Nicholson	
	272 -505		31-Jul	Excel.	0	0	0	0	6000	Fox	Approx. 4000 chum at mouth; windy partial survey
	272 -505		10-Aug	Excel.	0	0	0	0	200	Probasco	
	272 -505		12-Aug	Poor	0	0	0	12	0	Staak	Approx. 5 pinks at mouth, some jumpers

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					-----Species-----						
Central	272 -505		21-Aug	Excel.	0	0	0	0	100	Fox	
	272 -505		31-Aug	Excel.	0	0	30	0	0	Probasco	
	272 -506	Packers	20-Jul	Excel.	0	0	0	0	0	Wright	Approx. 300 chum in bay, close to mouth
	272 -506		22-Jul	Poor	0	0	0	0	100	Nicholson	
	272 -506		31-Jul	Excel.	0	0	0	0	150	Fox	Windy, partial survey of creek
	272 -506		12-Aug	Fair	0	0	0	0	0	Staak	Some jumpers at mouth
	272 -506		21-Aug	Excel.	0	0	0	0	0	Fox	Approx. 20 pinks and 5 chum in bay
	272 -507	unnamed	20-Jul	Excel.	0	0	0	0	0	Wright	
	272 -507		22-Jul	Poor	0	0	0	0	600	Nicholson	
	272 -507		31-Jul	Excel.	0	0	0	0	350	Fox	Windy, partial survey of creek
	272 -507		21-Aug	Excel.	0	0	0	0	0	Fox	
	272 -508	unnamed	20-Jul	Good	0	0	0	0	0	Wright	Approx. 500 - 600 chum in bay
	272 -508		22-Jul	Poor	0	0	0	0	175	Nicholson	
	272 -508		12-Aug	Poor	0	0	0	0	0	Staak	
	272 -508		21-Aug	Excel.	0	0	0	0	0	Fox	Approx. 50 chum in bay; windy, partial survey of st
	272 -509	Rudy's	20-Jul	Good	0	0	0	0	0	Wright	
	272 -509		21-Aug	Excel.	0	0	0	0	0	Fox	Approx. 20 chum in bay
	272 -510	unnamed	31-Aug	Excel.	0	0	0	500	0	Probasco	Approx. 200 pinks at mouth



Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					Species-----						
Central	272 -511 A	unnamed	Not Surveyed								
	272 -511 B	unnamed	Not Surveyed								
	272 -512	unnamed	Not Surveyed								
	272 -514	Northfork	20-Jul	Excel.	0	0	0	1150	0	Wright	Fish within first 1/4 m. in cr.; poor visibility i
	272 -514		22-Jul	Good	0	0	0	0	1800	Nicholson	
	272 -514		31-Jul	Good	0	5	0	200	3700	Fox	Approx. 1000 chum off mouth; 500 pinks in bay
	272 -514		12-Aug	Fair	0	0	0	100	5	Staak	
	272 -514		21-Aug	Excel.	0	10	0	5500	500	Fox	
	272 -514		31-Aug	Excel.	0	0	2200	5400	500	Probasco	
	272 -516	Cape Kumlik	Not Surveyed								
Eastern	272 -604	Black	31-Jul	Excel.	0	0	0	0	140	Fox	
	272 -604		12-Aug	Poor	0	0	0	0	0	Staak	Jumpers at mouth
	272 -604		21-Aug	Excel.	0	50	0	200	0	Fox	Approx. 600 pinks in bay
	272 -604		31-Aug	Excel.	0	0	9700	1000	0	Probasco	
	272 -605	Aniakchak	31-Jul	Poor	0	0	0	0	1700	Fox	North fork Aniakchak River

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					Species						
Eastern	272 -605		12-Aug	Fair	-	-	-	-	-	Staak	Stream muddy
	272 -605		21-Aug	Excel.	0	0	0	2500	275	Fox	Approx. 200 chum in bay; only North Fork and Albert Johnson creeks clear enough to survey
	272 -605		31-Aug	Excel.	0	0	0	0	0	Probasco	Jumpers off mouth; too muddy
	272 -606	Cape Agutka	31-Jul	Excel.	0	0	0	0	300	Fox	Approx. 100 chum in bay
	272 -606		12-Aug	Fair	0	0	0	0	0	Staak	
	272 -606		21-Aug	Excel.	0	0	0	4200	0	Fox	Approx. 200 pinks in bay
	272 -606		31-Aug	Excel.	0	0	700	2000	0	Probasco	
	272 -701	West	31-Jul	Excel.	0	0	0	0	2000	Fox	
	272 -702	Main	31-Jul	Excel.	0	0	0	0	350	Fox	
	272 -702		12-Aug	Fair	0	0	0	2000	30	Staak	
	272 -702		21-Aug	Excel.	0	130	0	11100	200	Probasco	Coho mixed with chum
	272 -702		31-Aug	Excel.	0	125	14000	7000	800	Probasco	Fourteen sport fishermen
	272 -703	Northeast	12-Aug	Fair	0	0	0	1200	0	Staak	
	272 -703		21-Aug	Excel.	0	0	0	5500	400	Fox	
	272 -703		31-Aug	Excel.	0	0	1000	4300	200	Probasco	
	272 -721	Yantarri	20-Jul	Poor	0	0	0	0	0	Wright	Muddy
	272 -721		31-Jul	Excel.	0	0	0	0	0	Fox	Approx. 1600 chum at mouth; 800 chum along beach

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					Species						
Eastern	272 -721		21-Aug	Fair	0	0	0	4500	2500	Fox	
	272 -721		31-Aug	Excel.	0	0	6000	13000	800	Probasco	
	272 -801	unnamed	31-Jul	Excel.	0	0	0	50	340	Fox	Approx. 200 chum along beach
	272 -801		12-Aug	Good	0	0	0	180	0	Staak	Fish in lower mile only
	272 -801		21-Aug	Excel.	0	0	0	9300	500	Fox	
	272 -801		31-Aug	Excel.	0	0	800	8400	2200	Probasco	
	272 -802	unnamed	31-Jul	Excel.	0	60	0	0	650	Fox	
	272 -802		12-Aug	Excel.	0	40	0	2200	2500	Fox	Coho mixed with chum
	272 -802		21-Aug	Good	0	30	0	50	0	Staak	
	272 -802		31-Aug	Excel.	0	0	0	4600	1100	Probasco	Approx. 1500 coho in bay
	272 -803	unnamed	31-Jul	Excel.	0	0	0	0	0	Fox	
	272 -803		21-Aug	Excel.	0	0	0	70	15	Fox	
	272 -803		31-Aug	Excel.	0	0	500	6900	600	Probasco	
	272 -804	Nakalilok	20-Jul	Fair	0	0	0	0	0	Wright	
	272 -804		31-Jul	Good	0	0	0	0	1100	Fox	Approx. 1700 chum at mouth; 1500 chum in bay
	272 -804		12-Aug	Poor	0	0	0	500	0	Staak	Approx. 400 pinks in bay
	272 -804		21-Aug	Excel.	1	0	2000	1400	2500	Fox	Approx. 3000 coho and 500 pinks at mouth; 4000 coho in bay; chinook up river 1.5 miles
	272 -804		31-Aug	Excel.	0	0	0	0	250	Probasco	

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond.	chinook	sockeye	coho	pink	chum	Observer	Remarks
				Survey	Species						
Eastern	272 -805	unnamed	20-Jul	Fair	0	0	0	0	0	Wright	
	272 -805		12-Aug	Poor	0	0	0	0	0	Staak	
	272 -805		21-Aug	Excel.	0	0	0	100	0	Fox	Approx. 500 pinks at mouth
	272 -805		31-Aug	Excel.	0	0	0	1400	0	Probasco	Gillnet by mouth
	272 -900	Cape Kuyuyukak	31-Aug	Excel.	0	0	0	100	0	Probasco	Approx. 300 pinks at mouth
	272 -901	unnamed	31-Aug	Excel.	0	0	0	800	0	Probasco	Approx. 100 pinks at mouth
	272 -902	unnamed	12-Aug	Fair	0	0	0	100	0	Staak	Approx. 2900 chum in bay, spread along beach
	272 -902		21-Aug	Excel.	0	0	0	350	350	Fox	Approx. 200 chum in bay
	272 -902		31-Aug	Excel.	0	0	0	3200	0	Probasco	
	272 -903 A&B	Chiginagak	20-Jul	Fair	0	0	0	0	0	Wright	Wind easterly 25 plus knots
	272 -903 A&B		31-Jul	Excel.	0	0	0	500	100	Fox	Approx. 500 chum at mouth; 100 chum in bay
	272 -903 A&B		21-Aug	Poor	0	0	0	2000	15700	Fox	Approx. 9000 pinks and 15000 chum in bay
	272 -903 A&B		31-Aug	Good	0	0	0	32000	5600	Probasco	Approx. 1800 coho and 400 pinks at mouth
	272 -904	unnamed	20-Jul	Fair	0	0	0	0	0	Wright	Wind easterly 25 plus knots
	272 -904		31-Jul	Excel.	0	0	0	0	3300	Fox	
	272 -904		12 Aug	Fair	0	0	0	10	20	Staak	
	272 -904		21-Aug	Excel.	0	0	0	200	1100	Fox	Approx. 13100 chum, 500 pinks, and 100 coho in bay
	272 -904		31-Aug	Excel.	0	0	0	11000	0	Probasco	

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					Species						
Eastern	272 -905	unnamed	12-Jul	Fair	0	0	0	700	30	Staak	Approx. 2000 chum at mouth and 10000 chum in bay;
	272 -905		31-Jul	Excel.	0	0	0	0	120	Fox	Approx. 100 chum at mouth; creek dry
	272 -905		21-Aug	Excel.	0	1	0	1000	300	Fox	Approx. 28200 pinks and 500 chum in bay
	272 -905		31-Aug	Excel.	0	0	0	20000	0	Probasco	
	272 -906	unnamed	20-Jul	Fair	0	0	0	0	0	Wright	Approx. 30 fish at mouth; wind east 25 plus knots
	272 -906		31-Jul	Excel.	0	0	0	0	0	Fox	Approx. 700 chum at mouth; 150 pinks in bay in high
	272 -906		31-Aug	Excel.	0	0	0	500	0	Probasco	
	272 -921	Port Wrangell	21-Aug	Poor	0	150	0	0	0	Fox	Too muddy, except side slough clear
	272 -921		31-Aug	Excel.	0	175	0	6000	1100	Probasco	
	272 -922	Wrangell	Not Surveyed								
	272 -923	Cape Providence	Not Surveyed								
	272 -961 A	Agripina Lake	20-Jul	Fair	0	0	0	0	0	Wright	
	272 -961 A		31-Jul	Excel.	0	0	0	100	100	Fox	Need to resurvey lake
	272 -961 A		12-Aug	Fair	0	0	0	300	0	Staak	Fish in lake
	272 -961 A		21-Aug	Excel.	0	0	0	20000	0	Fox	
	272 -961 A		31-Aug	Excel.	0	0	0	12000	0	Probasco	

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					Species						
Eastern	272 -961 B&C	Agripina	12-Aug	Good	0	0	0	1000	0	Staak	Approx. 3000 pinks in bay
	272 -962 A	Glacier	12-Aug	Good	0	0	0	0	0	Staak	Approx. 300 chum in bay
	272 -962 A		21-Aug	Poor	0	0	0	0	20	Fox	Approx. 1000 chum at mouth; 300 chum and 1000 coho
	272 -962 A		31-Aug	Fair	0	0	0	5500	0	Probasco	
	272 -962 B	unnamed	Not Surveyed								
	272 -963	Kilokak	20-Jul	Good	0	0	0	0	0	Wright	
	272 -963		31-Jul	Excel.	0	0	0	0	0	Fox	Approx. 20 chum in bay; creek dry
	272 -963		12-Aug	Excel.	0	0	0	10	0	Staak	
	272 -963		21-Aug	Excel.	0	0	0	0	0	Fox	Approx. 8000 pinks in bay; creek dry
	272 -963		31-Aug	Excel.	0	0	0	0	0	Probasco	Approx. 1000 pinks at mouth; creek dry
Western	273 -702	Coal Cape	13-Jul	Excel.	0	0	0	0	0	Staak	
	273 -702		20-Jul	Excel.	0	0	0	0	350	Fox	
	273 -702		24-Jul	Excel.	0	0	0	0	200	Staak	
	273 -702		31-Jul	Excel.	0	0	0	6500	300	Fox	1000 chum off mouth, 40 ton Capelin off Perryville
	273 -702		06-Aug	Poor	-	-	-	-	-	Probasco	Creek too dark for count
	273 -702		17-Aug	Excel.	0	0	0	3800	0	Probasco	Jumpers off mouth, poor vis. in bay
	273 -702		19-Aug	Excel.	0	0	0	11200	0	Fox	Bay muddy
	273 -702		22-Aug	Excel.	0	0	0	5800	0	Probasco	500 pink off mouth

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					Species						
Western	273 -702		04-Sep	Fair	0	0	0	1500	0	Fox	approx. 30 chum carcasses in cr.
	273 -720	West Ivan	Not Surveyed								
	273 -722	Ivan	13-Jul	Excel.	0	0	0	0	0	Staak	Calm conditions
	273 -722		20-Jul	Poor	-	-	-	-	-	Fox	Too muddy for count
	273 -722		24-Jul	Excel.	0	0	0	0	0	Staak	
	273 -722		31-Jul	Excel.	0	0	0	0	550	Fox	Approx. 600 chum off mouth
	273 -722		06-Aug	Fair	0	0	0	0	400	Probasco	Jumpers off mouth
	273 -722		13-Aug	Good	0	0	0	0	1100	Probasco	Poor vis. in bay
	273 -722		17-Aug	Excel.	0	0	0	11500	2400	Probasco	
	273 -722		19-Aug	Excel.	0	0	0	12800	200	Fox	
	273 -722		04-Sep	Fair	0	1	0	5300	100	Fox	Poor light
	273 -723	Fishrack	13-Jul	Excel.	0	0	0	0	0	Staak	
	273 -723		31-Jul	Excel.	0	0	0	0	0	Fox	Approx. 750 pinks off mouth
	273 -723		13-Aug	Good	0	0	0	0	0	Probasco	
	273 -723		17-Aug	Excel.	0	0	0	90	0	Probasco	Approx. 140 pinks in bay
	273 -723		19-Aug	Excel.	0	0	0	100	0	Fox	Approx. 1,150 pinks in bay
	273 -723		04-Sep	Excel.	0	0	0	2100	0	Fox	
	273 -802	Foot Bay	13-Jul	Excel.	0	0	0	0	0	Staak	Approx. 30 chum off mouth
	273 -802		20-Jul	Excel.	0	0	0	0	40	Fox	

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					-----Species-----						
Western	273 -802		31-Jul	Excel.	0	0	0	0	1000	Probasco	Approx. 450 chum off mouth
	273 -802		13-Aug	Excel.	0	0	0	0	0	Probasco	
	273 -802		17-Aug	Excel.	0	0	0	900	0	Probasco	
	273 -802		19-Aug	Excel.	0	0	0	450	0	Fox	
	273 -802		04-Sep	Excel.	0	0	0	5300	100	Fox	Creek low
	273 -821	unnamed	31-Jul	Excel.	0	0	0	0	0	Fox	Approximately 300 chum off mouth
	273 -821		13-Aug	Excel.	0	0	0	15	0	Probasco	
	273 -821		17-Aug	Excel.	0	0	0	100	0	Probasco	Approximately 500 pinks off mouth
	273 -821		04-Sep	Excel.	0	0	0	300	0	Fox	Low water conditions
	273 -822	unnamed	31-Jul	Excel.	0	0	0	0	15	Fox	Approximately 250 chum off mouth
	273 -822		17-Aug	Excel.	0	0	0	0	0	Probasco	
	273 -822		04-Sep	Excel.	0	0	0	0	2	Fox	Approximately 10 chum off mouth
	273 -823	Spoon	31-Jul	Excel.	0	0	0	0	1	Fox	Approx. 500 chum off mouth
	273 -823		17-Aug	Excel.	0	0	0	30	0	Probasco	
	273 -823		04-Sep	Poor	0	0	0	0	0	Fox	
	273 -842	Portage Bay	13-Jul	Excel.	0	0	0	0	0	Staak	Approx. 75 chum off stream mouth
	273 -842		20-Jul	Excel.	0	0	0	0	5	Fox	Approx. 25 chum off stream mouth
	273 -842		24-Jul	Excel.	0	0	0	0	0	Staak	
	273 -842		30-Jul	Excel.	0	0	0	0	40	Fox	



Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					Species						
Western	273 -842		31-Jul	Excel.	0	0	0	0	2642	Fox	Approx. 170 chum off stream mouth
	273 -842		06-Aug	Fair	0	0	0	0	200	Probasco	Approx. 1,000 chum off stream mouth
	273 -842		13-Aug	Good	0	0	0	0	1500	Probasco	Many jumpers in bay
	273 -842		17-Aug	Excel.	0	0	0	0	3400	Probasco	Approx. 3,000 chum off flats & 63,000 chums in bay
	273 -842		21-Aug	Excel.	0	0	0	0	3500	Fox	Approx. 2,000 chum off cr. mouth, & 14,400 chum and 5,800 pinks in bay
	273 -842		22-Aug	Excel.	0	0	0	0	6400	Probasco	Approx. 32,000 chum in bay
	273 -842		02-Sep	Fair	0	0	0	0	5600	Fox	Coho jumpers off mouth; too windy to count
	273 -843	Seal Bay	24-Jul	Excel.	0	0	0	0	0	Staak	Approx. 500 chum off cr. mouth & 2,500 chum along shore between creeks 842&843
	273 -843		31-Jul	Excel.	0	0	0	0	45	Fox	
	273 -843		06-Aug	Fair	0	0	0	0	50	Probasco	
	273 -843		13-Aug	Good	0	0	0	0	110	Probasco	
	273 -843		17-Aug	Excel.	0	0	0	0	1400	Probasco	
	273 -843		21-Aug	Excel.	0	0	0	500	3900	Fox	
	273 -843		22-Aug	Excel.	-	-	-	-	-	Probasco	Approx. 8,000 chum in bay
	273 -843		02-Sep	Fair	0	0	0	0	1100	Fox	
	273 -844	unnamed	31-Jul	Excel.	0	0	0	0	5	Fox	
	273 -844		06-Aug	Fair	0	0	0	0	0	Probasco	
	273 -844		13-Aug	Good	0	0	0	0	0	Probasco	
	273 -844		17-Aug	Excel.	0	0	0	0	0	Probasco	

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					-----Species-----						
Western	273 -844		02-Sep	Fair	0	0	0	0	30	Fox	
	273 -845	Dog Bay	31-Jul	Excel.	0	0	0	0	0	Fox	Approx. 200 chum in bay
	273 -845		13-Aug	Good	0	0	0	0	100	Probasco	Approx. 50 chum in bay
	273 -845		17-Aug	Excel.	0	0	0	0	400	Probasco	
	273 -845		02-Sep	Fair	0	0	0	0	200	Fox	Additional 1,500 chum carcasses in cr.; 300 coho of
Perryville	275 -402	Smokey Hollow	24-Jul	Good	0	0	0	0	75	Schwartz	
	275 -402		17-Aug	Excel.	0	0	0	700	0	Probasco	
	275 -402		22-Aug	Excel.	0	0	0	140	0	Probasco	1,000 pinks off mouth
	275 -402		04-Sep	Excel.	0	0	0	700	0	Fox	200 coho off mouth
	275 -404	Wasco's	24-Jul	Good	0	0	0	0	0	Schwartz	
	275 -404		31-Jul	Excel.	0	0	0	0	10	Fox	
	275 -404		17-Aug	Excel.	0	0	0	0	0	Probasco	
	275 -404		21-Aug	Excel.	-	-	-	-	-	Fox	61,000 chum & 30,000 pink in bay between 402-405
	275 -404		22-Aug	Excel.	0	0	0	4500	0	Probasco	20,000 pink in bay colored up
	275 -404		04-Sep	Excel.	0	0	0	7500	50	Fox	Approx. 300 pinks off mouth
	275 -405	Sunnyside	11-Jul	Excel.	0	0	0	0	0	Staak	Approx. 30 chum off cr. mouth
	275 -405		13-Jul	Fair	0	0	0	0	0	Staak	
	275 -405		20-Jul	Excel.	0	0	0	0	0	Fox	
	275 -405		24-Jul	Excel.	0	0	0	200	700	Staak	Poor vis. in bay

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					Species						
Perryville	275 -405		31-Jul	Excel.	0	0	0	0	0	Fox	
	275 -405		17-Aug	Excel.	0	0	0	0	0	Probasco	
	275 -405		19-Aug	Excel.	0	0	0	4000	1700	Fox	Approx. 25,000 pinks in bay
	275 -405		04-Sep	Excel.	0	0	0	0	0	Fox	Stream totally dry, 1100 chum off mouth
	275 -406	Ivanof	11-Jul	Good	0	0	0	0	0	Wright	Approx. 8,000 -10,000 chums by dock
	275 -406		13-Jul	Good	0	0	0	0	0	Staak	Approx. 2,000 chum in bay
	275 -406		20-Jul	Excel.	0	0	0	0	1500	Fox	
	275 -406		24-Jul	Excel.	0	0	0	400	4500	Staak	Approx. 50 pinks at mouth
	275 -406		24-Jul	Excel.	0	0	0	0	4745	Schwartz	Approx. 235 pinks at mouth
	275 -406		31-Jul	Excel.	0	0	0	500	4600	Fox	Approx. 35,000 pinks & 8,000 chum at mouth, 4000 ch
	275 -406		06-Aug	Fair	0	0	0	200	1800	Probasco	Many jumpers in bay; vis. poor
	275 -406		17-Aug	Excel.	0	0	0	2600	450	Probasco	Approx. 5,000 chum & 20,000 pinks in bay
	275 -406		19-Aug	Excel.	0	0	0	6000	350	Fox	Approx. 8,000 chum & 13,500 pinks off cr. mouth
	275 -406		21-Aug	Excel.	0	0	0	8500	500	Fox	Approx. 25,000 chum & 31,000 pinks off cr. mouth;
											75,000 chum and 25,000 pinks in bay
	275 -406		22-Aug	Excel.	0	0	0	4000	800	Probasco	Approx. 2000 chum & 26,000 pinks off cr. mouth;
											125,000 chum & 80,000 pinks in bay
	275 -406		04-Sep	Excel.	0	0	0	16900	1000	Fox	Approx. 1,400 chums off cr. mouth
	275 -502	Humpback Bay	13-Jul	Good	0	0	0	0	175	Fox	
	275 -502		24-Jul	Fair	0	0	0	300	10	Staak	
	275 -502		31-Jul	Excel.	0	0	0	100	750	Fox	Approx. 1000 pinks and 6500 chums off cr. mouth

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond.	chinook	sockeye	coho	pink	chum	Observer	Remarks
				Survey	Species						
Perryville	275 -502		06-Aug	Fair	0	0	0	200	0	Probasco	Approx. 2000 pinks off cr. mouth
	275 -502		17-Aug	Excel.	0	0	0	4000	0	Probasco	Approx. 9000 pinks in bay
	275 -502		19-Aug	Excel.	0	0	0	5900	0	Fox	Approx. 4800 pinks in bay; bay turbid
	275 -502		21-Aug	Excel.	0	0	0	15500	500	Fox	Approx. 12000 pinks and 450 chum in bay
	275 -502		22-Aug	Excel.	0	0	0	9500	0	Probasco	Approx. 4000 pinks off cr. mouth
	275 -502		04-Sep	Excel.	0	0	0	5000	0	Fox	Approx. 1000 chum off cr. mouth
	275 -504	unnamed	20-Jul	Excel.	0	0	0	0	0	Fox	
	275 -504		31-Jul	Excel.	0	0	0	0	0	Fox	
	275 -504		17-Aug	Excel.	0	0	0	300	0	Probasco	Approx. 400 pinks off mouth
	275 -504		19-Aug	Excel.	0	0	0	3500	300	Fox	Approx. 1800 pinks in bay; creek count low due to vegetation overgrowth
	275 -504		21-Aug	Excel.	0	0	0	0	0	Fox	Approx. 17000 pinks off mouth
	275 -504		22-Aug	Excel.	0	0	0	200	0	Probasco	Approx. 11000 pinks off mouth
	275 -504		04-Sep	Excel.	0	0	0	2000	0	Fox	Stream low; some fish missed due to tree cover
	275 -505	unnamed	20-Jul	Excel.	0	0	0	0	0	Fox	
	275 -505		24-Jul	Excel.	0	0	0	0	0	Staak	
	275 -505		31-Jul	Good	0	0	0	0	0	Fox	Approx. 200 pinks and 500 chum off cr. mouth
	275 -505		17-Aug	Excel.	0	0	0	300	0	Probasco	Approx. 30000 pinks in bay
	275 -505		19-Aug	Excel.	0	0	0	500	50	Fox	Approx. 12500 pinks and 2000 chums in bay
	275 -505		21-Aug	Excel.	-	-	-	-	-	Fox	Approx. 35000 pinks in bay
	275 -505		22-Aug	Excel.	0	0	0	2000	0	Probasco	Approx. 36000 pinks off cr. mouth

Table 39 (continued). Chignik area stream surveys, 1987.

District	Stream Number	Stream Name	Date	Cond. Survey	chinook	sockeye	coho	pink	chum	Observer	Remarks
					-----Species-----						
Perryville	275 -505		04-Sep	Excel.	0	0	0	2300	0	Fox	Very low water conditions
	275 -506	unnamed	19-Aug	Excel.	0	0	0	0	0	Fox	Approx. 1200 pinks in bay
	275 -600	unnamed	31-Jul	Fair	0	0	0	0	0	Fox	Numbers of fish traveling off Coal Cape
	275 -601	unnamed	17-Aug	Poor	0	0	0	0	0	Probasco	Jumpers off the cr. mouth

#### LITERATURE CITED

- Conrad, R.H. 1984. Management applications of scale pattern analysis methods for the sockeye salmon runs to Chignik, Alaska. Alaska Dept. Fish and Game, Tech. Data Rpt. No. 233. 185 pp.
- Conrad, R. H., and G.T. Ruggerone. 1985. Stock composition of the 1984 sockeye salmon (Oncorhynchus nerka) run to the Chignik Lakes estimated using scale patterns and linear discriminant functions. Alaska Dept. Fish and Game, Tech. Data Rpt. No. 151. 43 pp.
- Dahlberg, M.L. 1968. Analysis of the dynamics of sockeye salmon returns to Chignik Lakes, Alaska. Ph.D. dissertation. Univ. Washington, Seattle. 338 pp.
- Higgins, E. 1934. Progress in biological inquiries, 1932. Page 106 in Report of the Commissioner of Fisheries to the Secretary of Commerce for the fiscal year ended June 30, 1933. U.S. Bureau of Fisheries.
- Johnson, A., and B. Barrett. 1986. Estimation of salmon escapement based on stream survey data: A geometric approach. In press. Alaska Dept. Fish and Game, Division of Commercial Fisheries, Informational Leaflet, Juneau, Alaska.
- Narver, D.W. 1963. Identification of adult red salmon groups by lacustrine scale measurement, time of entry, and spawning characteristics. M.S. Thesis, Univ. Washington, Seattle. 96 pp.
- Narver, D.W. 1966. Pelagial ecology and carrying capacity of sockeye salmon in the Chignik Lakes, Alaska. Ph.D. Dissertation, Univ. Washington, Seattle. 348 pp.

APPENDIX A  
1987 SALMON BOARD REPORT

ALASKA DEPARTMENT OF FISH AND GAME  
DIVISION OF COMMERCIAL FISHERIES

CHIGNIK MANAGEMENT AREA

1987

SALMON REPORT

TO THE

ALASKA BOARD OF FISHERIES

DECEMBER 1987

ANCHORAGE, ALASKA

Submitted by: Peter J. Probasco  
Area Management Biologist

Jeff Fox  
Chignik Fisheries Biologist



## TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	
Description of Area.....	1
Economic Value of the 1987 Season.....	1
1987 SEASON SUMMARY	
Sockeye Salmon (Background Information).....	2
1987 Season - Sockeye Salmon.....	3
Pink and Chum Salmon.....	5
Coho Salmon.....	6
Chinook Salmon.....	6

## LIST OF FIGURES

Figure 1. Chignik Area Statistical Chart for Salmon and Herring.....	7
Figure 2. Chignik Lakes Watershed.....	8
Figure 3. Economic Value of Chignik Salmon (Graph).....	9
Figure 4. Economic Value Per Permit Holder (Graph).....	10
Figure 5. Chignik Chinook Catch and Escapement 1963-1987 (Graph)....	11
Figure 6. Chignik Sockeye Catch and Escapement 1954-1987 (Graph)....	12
Figure 7. Chignik Coho Catch (Graph).....	13
Figure 8. Chignik Pink Catch and Escapement (Graph).....	14
Figure 9. Chignik Chum Catch and Escapement (Graph).....	15

## LIST OF TABLES

Table 1. Chignik River System Sockeye Escapement Goals Black Lake (Early) and Chignik Lake (Late) Runs.....	16
Table 2. Impact of Cape Igvak and Balboa-Stepovak catches on sockeye salmon catches destined for Chignik 1964-1987 (number of fish in thousands).....	17
Table 3. Chignik Management Area Salmon Catches 1960-1987.....	19

CHIGNIK AREA SALMON REPORT  
TO THE BOARD OF FISHERIES  
1987

INTRODUCTION

Description of Area

The Chignik management area lies on the south side of the Alaska Peninsula between the Kodiak area to the east and the Alaska Peninsula area to the west. Kilokak Rocks is the eastern boundary and Kupreanof Point is the western boundary. The area is divided into five districts; the Eastern, Central, Chignik Bay, Western and Perryville districts (Figure 1). There are approximately ninety salmon streams within the area.

The Chignik lakes watershed is 274 km southwest of Kodiak on the south side of the Alaska Peninsula. The major features of the watershed are two large, interconnected lakes, Black Lake and Chignik Lake, with a single outlet river which empties into a nearly enclosed estuary, Chignik Lagoon (Figure 2).

Salmon management and research are conducted from the Department's field station on the Chignik River. A 400 foot pile driven weir is constructed annually across the river for enumeration of sockeye salmon.

Economic Value of the 1987 Season

There were 103 registered vessels fishing the Chignik management area in 1987. The ex-vessel value of all salmon species caught within this area is estimated at \$26.5 million based on the average price per pound paid to the fishermen for each species of salmon. The estimated income per vessel is \$257,000. The total value of Chignik produced sockeye salmon to commercial fishermen from the Chignik<sup>1</sup>, Kodiak<sup>2</sup>, and Alaska Peninsula<sup>2</sup> management areas is estimated at \$33.1 million.

---

<sup>1</sup>Estimated sockeye salmon catch for the Chignik Management Area is 1,898,838.

<sup>2</sup>Estimated Cape Igvak catch of Chignik bound sockeye salmon is 343,402 and 188,306 for Balboa-Stepovak areas. The Cape Igvak and Balboa-Stepovak figures represent 80% of the sockeye catches for those areas as it is estimated that roughly 80% of the sockeye caught in the Cape Igvak section and Balboa-Stepovak are destined for Chignik. As outlined in the management plans for these two areas those catches through 25 July are used to estimate the percent interception of Chignik bound salmon.

## 1987 SEASON SUMMARY

### Sockeye Salmon (Background Information)

The sockeye salmon (*Oncorhynchus nerka* Walbaum) in the Chignik system is the most important fishery resource in the area. There are two major sockeye salmon stocks in the Chignik system. The stocks spawn in different areas of the system and have a different time of spawning migration, length of fresh-water residence as juveniles, and age at maturity (Higgins 1934; Narver 1963). The majority of returning adults of one stock pass through the fishery in June and spawn in the tributaries to Black Lake (Black Lake Stock). Adults from the other stock enter the fishery in late June and continue until late September with the period of peak abundance usually occurring during the third week of July. The adults from this stock spawn in the tributaries to Chignik Lake, Chignik Lake beach areas, and Black River tributaries (Chignik Lake Stock).

Narver (1966) and Dahlberg (1968) independently estimated the desired escapement goals for the Chignik sockeye salmon stocks at 400,000 fish for Black Lake and 250,000 fish for Chignik Lake. Since 1966 the sockeye salmon returns to Chignik have been managed to ensure that these escapement goals are met. The effectiveness of this management strategy is evident from the increases in the Chignik returns during the last 30 years. For the three most recent ten-year periods, the average total annual returns are:

1957-1966	.88 million;
1967-1976	1.53 million;
1977-1986	2.16 million;
1987	3.23 million

Although the periods of peak passage of the Chignik sockeye salmon stocks are usually between two and four weeks apart, enumerating the catch and escapement of each stock is complicated due to a period of overlap from about mid-June to mid-July, when both stocks pass through the fishery and enter the escapement. Inseason estimates of the numbers of each stock in the daily escapements are required to manage the return for optimum escapements. Post-season estimates of the total catch and escapement of each stock, and the age composition of each of these components, are needed to compile brood-year tables and to forecast the return by stock in subsequent years (Conrad 1985).

#### 1987 Season - Sockeye Salmon

The Chignik weir was fish tight on 26 May, with counts starting on 27 May. Prior to a commercial opening within the Chignik area, a cumulative escapement count of 40,000 sockeye through the weir by 12 June with a good indication of a buildup within the lagoon is needed. Inseason escapement goals (Table 1) are set for June and July in order to assure that the overall escapement goals of 400,000 for the Black Lake run and 250,000 for the Chignik Lake run are achieved.

The daily escapement through the weir on 9 June was 6,996 sockeye bringing the cumulative escapement to date to 36,041. Based on the escapement to date and a good showing of fish in the lagoon (estimated 70-100,000 based on the 6 June test fishery) the first commercial opening was announced for 4:00 P.M., 11 June for 24 hours. On 10 June the daily escapement increased to 41,314. Based on the increased escapements the first commercial opening was extended until further notice with a reduction in markers to Mensis Point. This initial fishery remained open until 6:00 P.M. 18 June, harvesting 530,043 sockeye.

The Chignik Management Area closed to commercial salmon fishing at 6:00 P.M. 18 June and remained closed until 8:00 P.M., 20 June in order to bring the sockeye escapement back within the escapement schedule. A cumulative escapement of 200,000 sockeye through the weir by 20 June is desired. At 10:00 A.M. on 20 June this was achieved so another opening was announced for 8:00 P.M. on 20 June. The fishery remained open until 6:00 P.M., 23 June when a closure was again necessary to ensure that the early run escapement goal of 400,000 sockeye would be achieved by the end of June. The harvest during this second opening was 237,904 sockeye. At 12:00 noon on 26 June it was projected that the early run escapement goal of 400,000 sockeye for the month of June would be achieved so another commercial fishery was announced for 6:00 P.M., 27 June. This fishery remained open until 12:00 P.M. on 7 July at which time a closure was necessary in order to evaluate the strength of the late (Chignik Lake) run. The harvest during this period was 714,623 sockeye.

During the transition period (usually 15 June to 15 July) between the Black Lake and Chignik Lake sockeye salmon runs, scale samples collected from the commercial fishery and Black Lake were analyzed to determine the placement of

the average time of entry curve (ATOE). The ATOE curve is used to determine the percent composition of each run throughout the commercial fishery, allowing a breakdown of each stock in the daily escapement. On 3 July the model was completed and the ATOE curve indicated that on 6-7 July, 50% of the fish entering the lagoon were late run. Commercial fishing in the Chignik Area was opened at 2:00 P.M. on 10 July when it was projected that the late run escapement would be 40,000 and within the escapement schedule for the late run. This fishery remained open until 12:00 P.M. on 16 July. The harvest during this period was 175,946 sockeye. Analysis of scale samples taken in the lagoon between 3 July when the ATOE curve was set and 16 July indicated that the percentage late run indicated by the placement of the ATOE curve was not being achieved. Instead of the 50% transition occurring on 6-7 July, scale analysis indicated this took place on 15 July. The cumulative escapement adjusted for this scale analysis on 16 July was 58,044, approximately 20-30,000 short of the desired escapement for this date.

Escapements continued to lag until 20 July and then averaged 17-18,000 per day until 26 July when the cumulative late run escapement of 174,328 sockeye fell within the late run escapement schedule. The commercial fishery opened at 6:00 A.M., 26 July and remained open until 12:01 A.M. 29 July. The harvest during this period was 86,551 sockeye.

In order to achieve the minimum desired escapement of 250,000 late run sockeye the Chignik Bay District remained closed until 12 August. Due to increasing escapements from 6-11 August (averaging over 5,000) and the projection of reaching the desired escapement of 250,000 late run sockeye a commercial opening was allowed 6:00 A.M., 12 August and closed at 9:00 P.M., 14 August. The harvest for this opening was 31,238 sockeye. In order to harvest the surplus sockeye while still allowing for the escapement of coho salmon within the Chignik River system, weekly commercial salmon fishing periods were allowed after 18 August and continued until the end of the commercial salmon season 31 October. During this period 105,451 sockeye were harvested.

Including the interception fisheries at Cape Igvak and Balboa/Stepovak the total Black Lake sockeye salmon run is estimated at 2,465,558, with a commercial harvest for all areas totaling 1,855,168.

The total Chignik Lake sockeye salmon run is estimated at 768,731 with a commercial harvest of 575,378.

In conclusion, the overall return of sockeye to the Chignik Lakes system is 3,234,289. This is within the range forecast in 1987 of 2.4 to 3.8 million and is 100,000 above the point estimate of 3.10 million. However the early run was stronger than forecast and the late run was weaker than forecast.

#### Pink and Chum Salmon

During the 1987 commercial salmon season pink and chum returns to the Chignik Area were generally very weak. The majority of the Western and Perryville District streams received good escapement levels and produced the majority of the catch. The catches in the Western and Perryville Districts were limited due to many factors. The majority of the pink and chum return was later than normal. Also sockeye catches in the Chignik Bay District were good and the price paid for sockeye made many Chignik fishermen reluctant to travel to the outside areas to target on pink and chum stocks which pay a much lower price per pound. The Western and Perryville Districts were opened on a weekly basis starting 10 July to prevent a large buildup of pinks and chums within the inner bay areas in excess to escapement needs.

Due to the factors listed above along with others such as weather and run timing, this objective was not met. On 22 August an estimated 200,000 pinks and chums were schooled inside the markers of Ivanof Bay. Several other bays in the Western and Perryville Districts also had fish arriving in fair to good numbers. These areas were surveyed four times by ADF&G over a 5 - 6 day period and several commercial fishermen also surveyed the area on a frequent basis. The opinion held by the majority of surveyers was that most of the fish were dark and very colored up. No processor could be found that was interested in buying any volume of these fish as they yield an inferior frozen product. To prevent the wastage of many of these fish the inside bay areas remained closed during the 25 August opening.

In the Central and Eastern Districts returns were lagging and many of the streams were dry or had very low water levels preventing the escapement from entering many of these streams until late in the season. This coupled with a

weak late run of sockeye to Chignik Lake restricted the fishing time in these areas. Approximately 85% of the total Chignik Area catch of pink and chum salmon came from the Western and Perryville Districts.

In summary, the 1987 commercial pink and chum harvest was below average. The average pink catch for the past 10 years is 752,794 as compared to the 1987 harvest of 246,775. The average chum catch for the past 10 years was 194,629 as compared to the 1987 harvest of 127,261.

#### Coho Salmon

The 1987 coho harvest of 150,414 is the third largest on record. The bulk of this harvest came from the Chignik Bay (51%) and Western Districts (39%). Escapement monitoring in the Chignik Area is sporadic due to the timing of the run and logistics involved in monitoring the many systems within the area.

#### Chinook

The chinook harvest in 1987 was 2,651. The majority of this harvest came from the Chignik Bay District where chinook are caught incidental to the sockeye fishery. The Chignik River is the only major chinook producing stream within the Chignik Area. Escapements into this system in 1987 were 2,624 chinook. However no adjustment has been made in this escapement to reflect fish taken by sport or subsistence fishermen.

FIGURE 1. THE CHIGNIK MANAGEMENT AREA

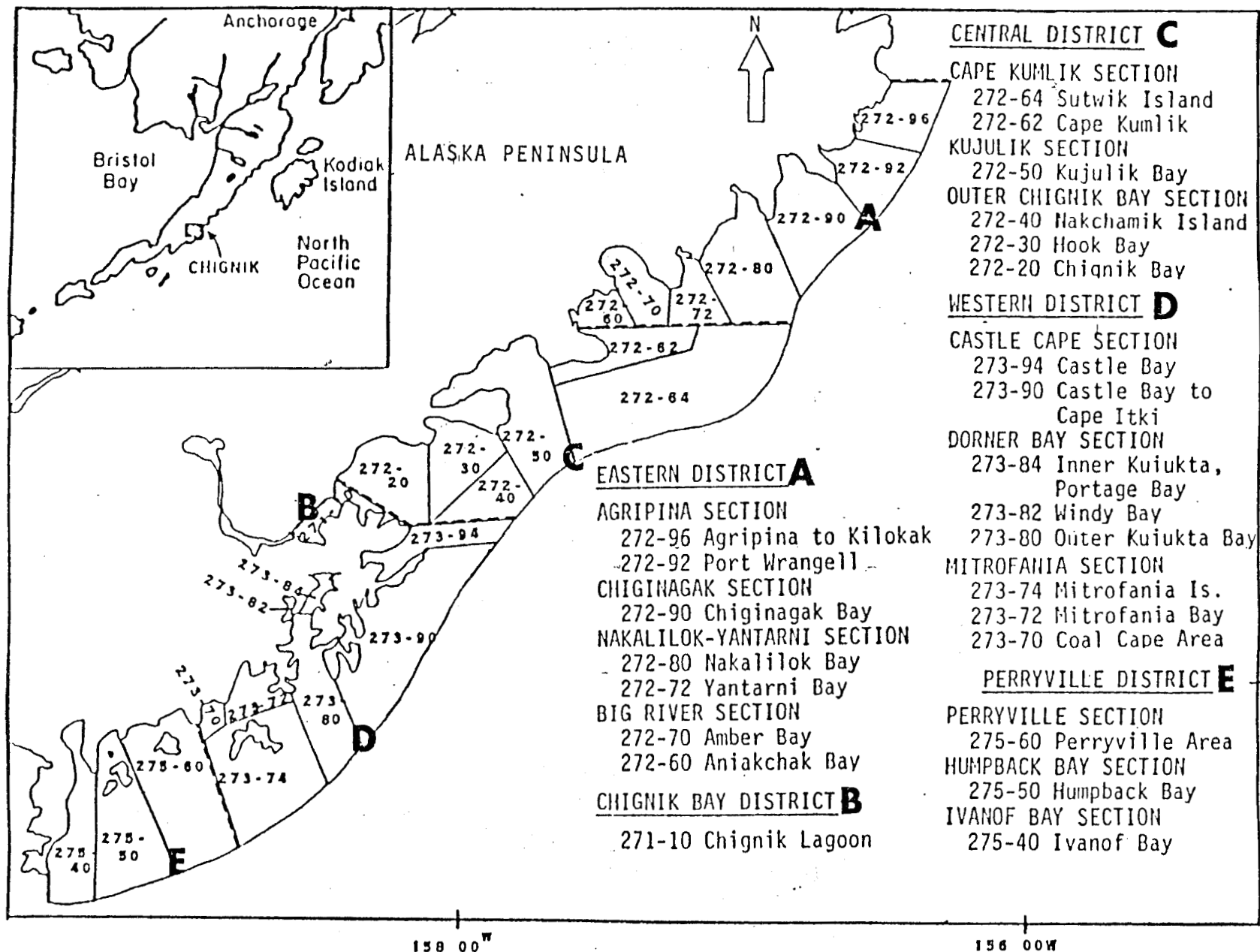
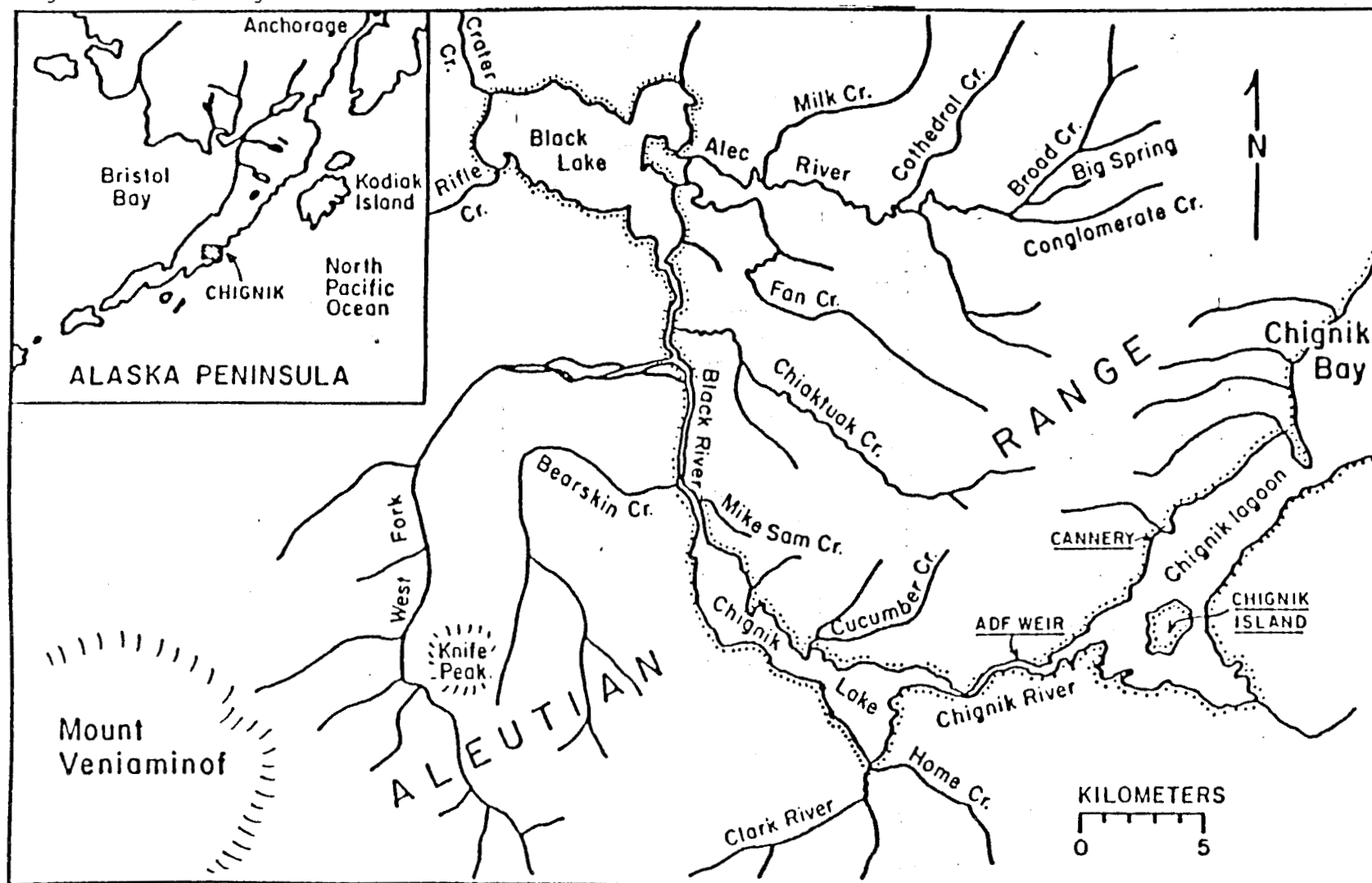




Figure 2. The Chignik Lakes Watershed



# ECONOMIC VALUE OF SALMON TO CHIGNIK FISHERMEN

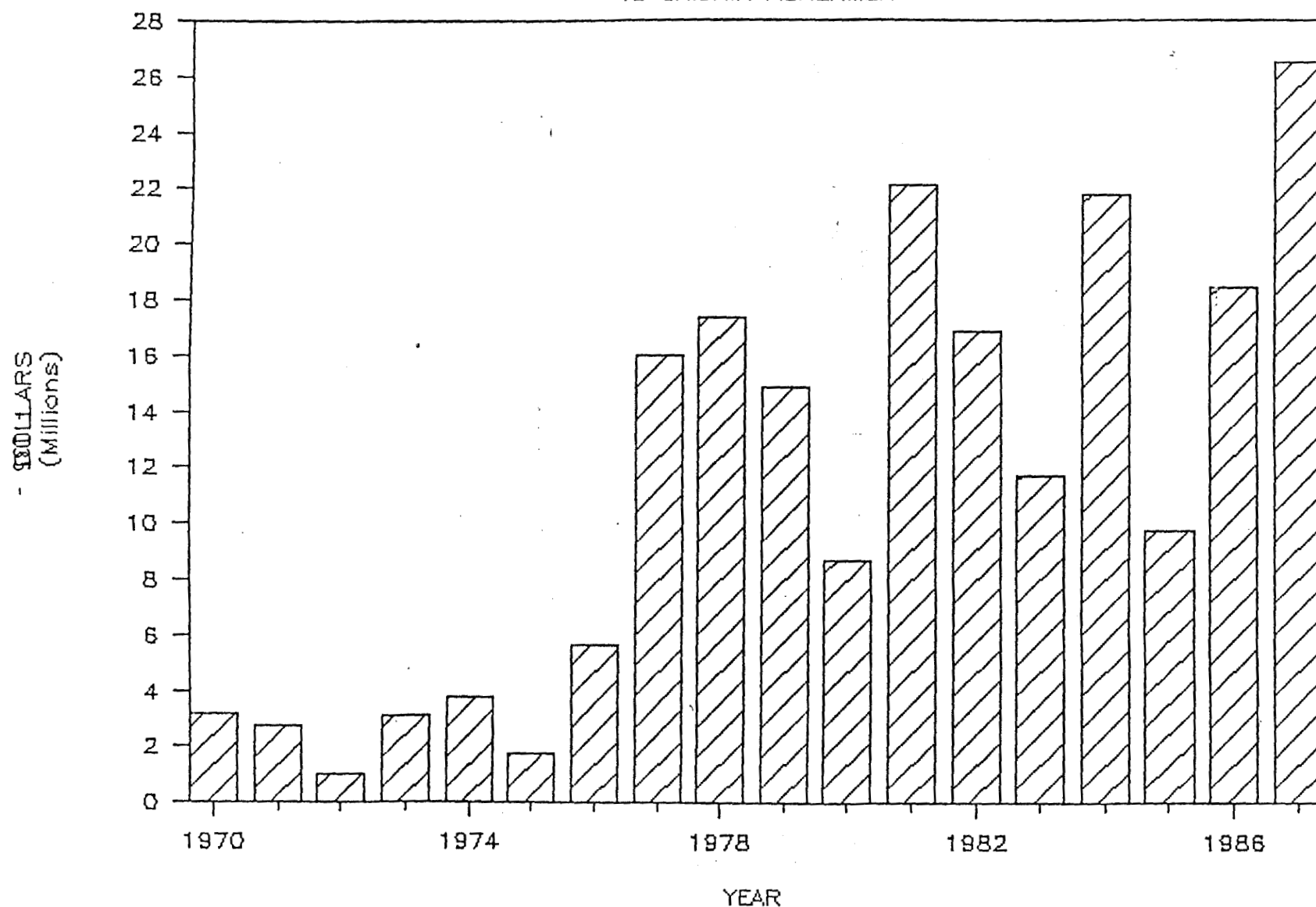


Figure 3. Economic Value of Chignik Salmon, 1970 to 1987.

# AVERAGE ECONOMIC VALUE OF SALMON PER PERMIT HOLDER

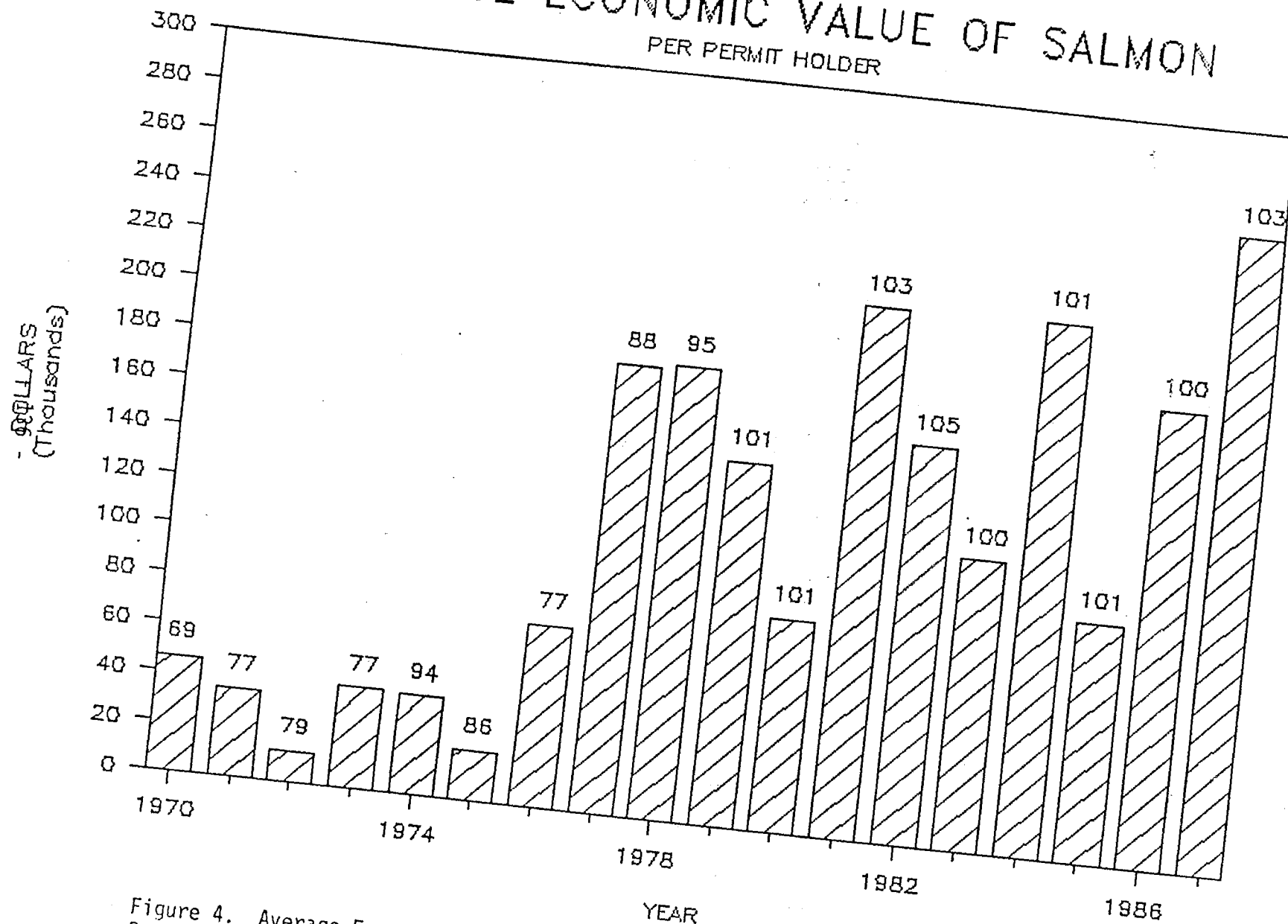


Figure 4. Average Economic Value of Chignik Salmon Per Permit Holder. Number Above Bar Represents Number of Permits Fished for that Year.

# CHIGNIK CHINOOK

TOTAL RUN

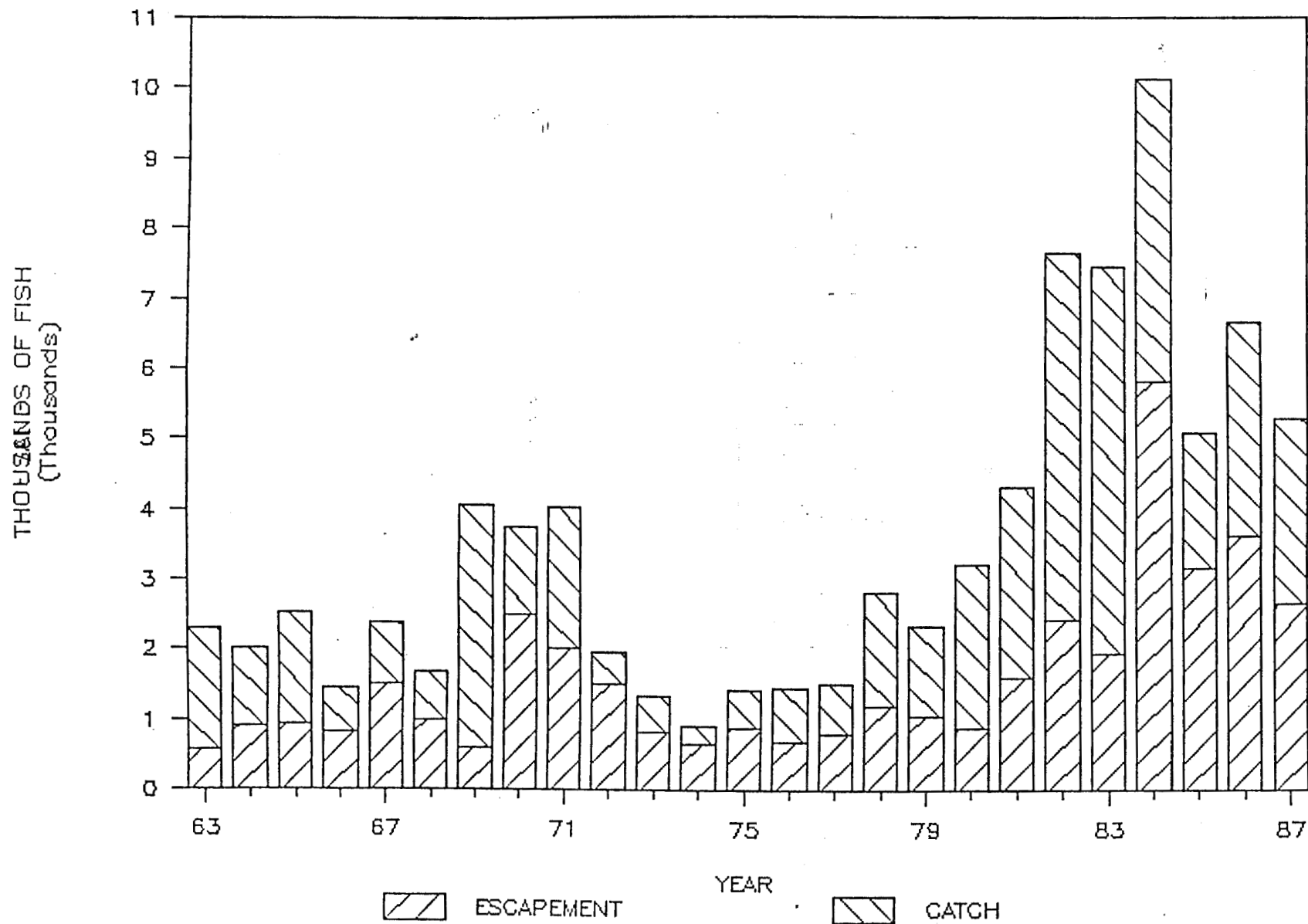


Figure 5. Chignik Chinook Catch and Escapement.

# CHIGNIK SOCKEYE

TOTAL RUN

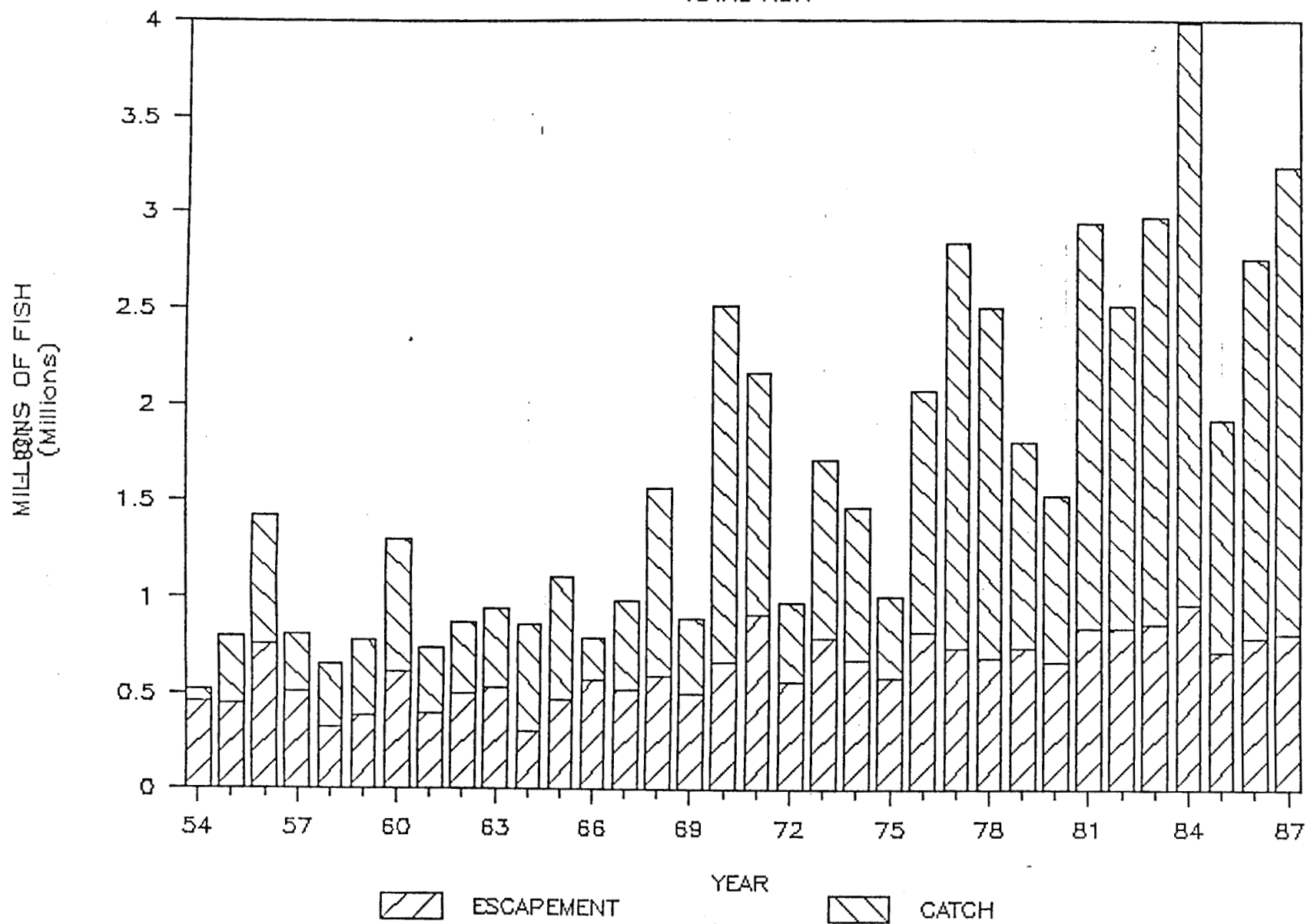


Figure 6. Chignik Sockeye Catch and Escapement.

# CHIGNIK COHO CATCH

1960-1987

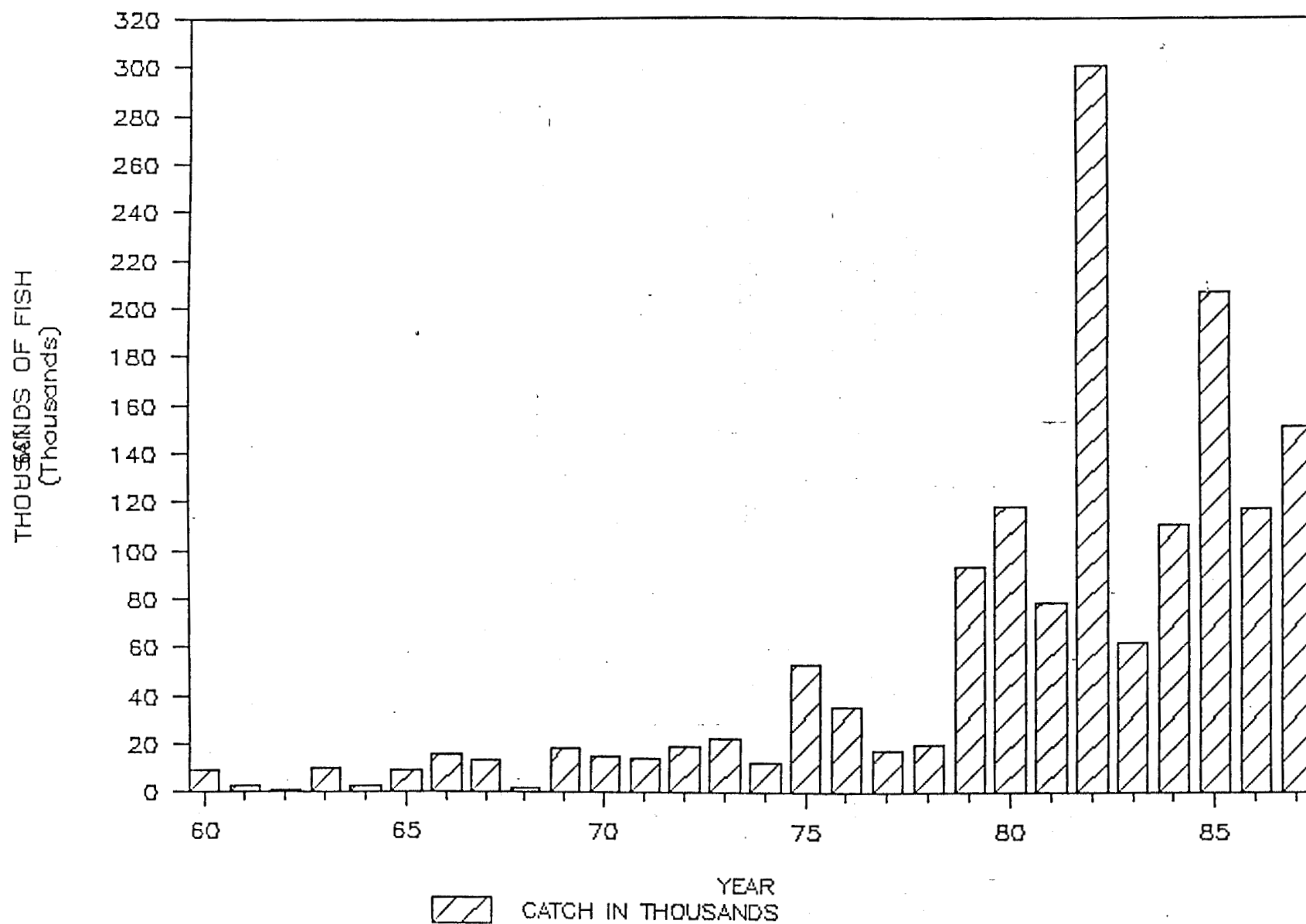


Figure 7. Chignik Coho Catch Only.

# CHIGNIK PINK

TOTAL RUN

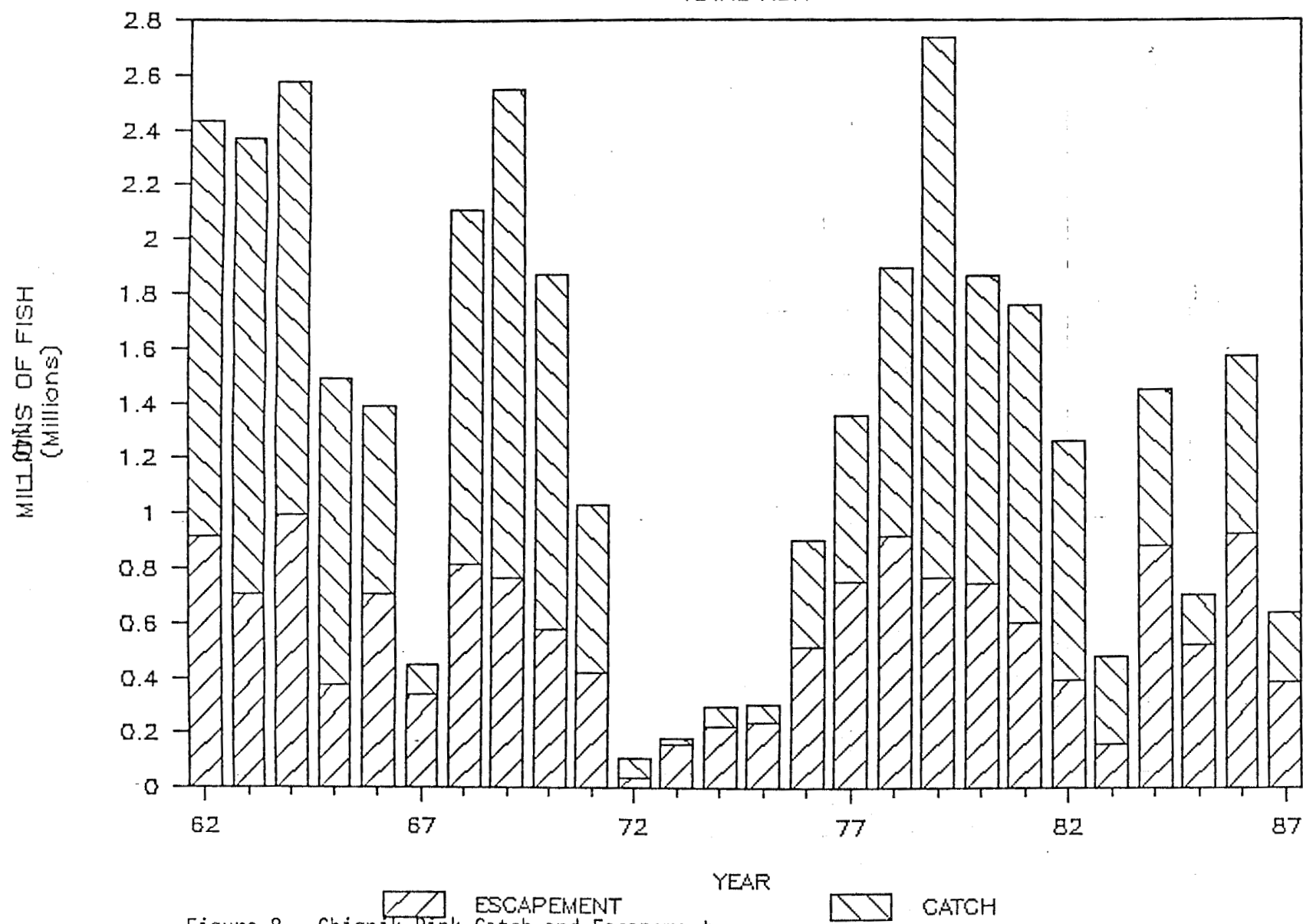


Figure 8. Chignik Pink Catch and Escapement.

# CHIGNIK CHUM

TOTAL RUN

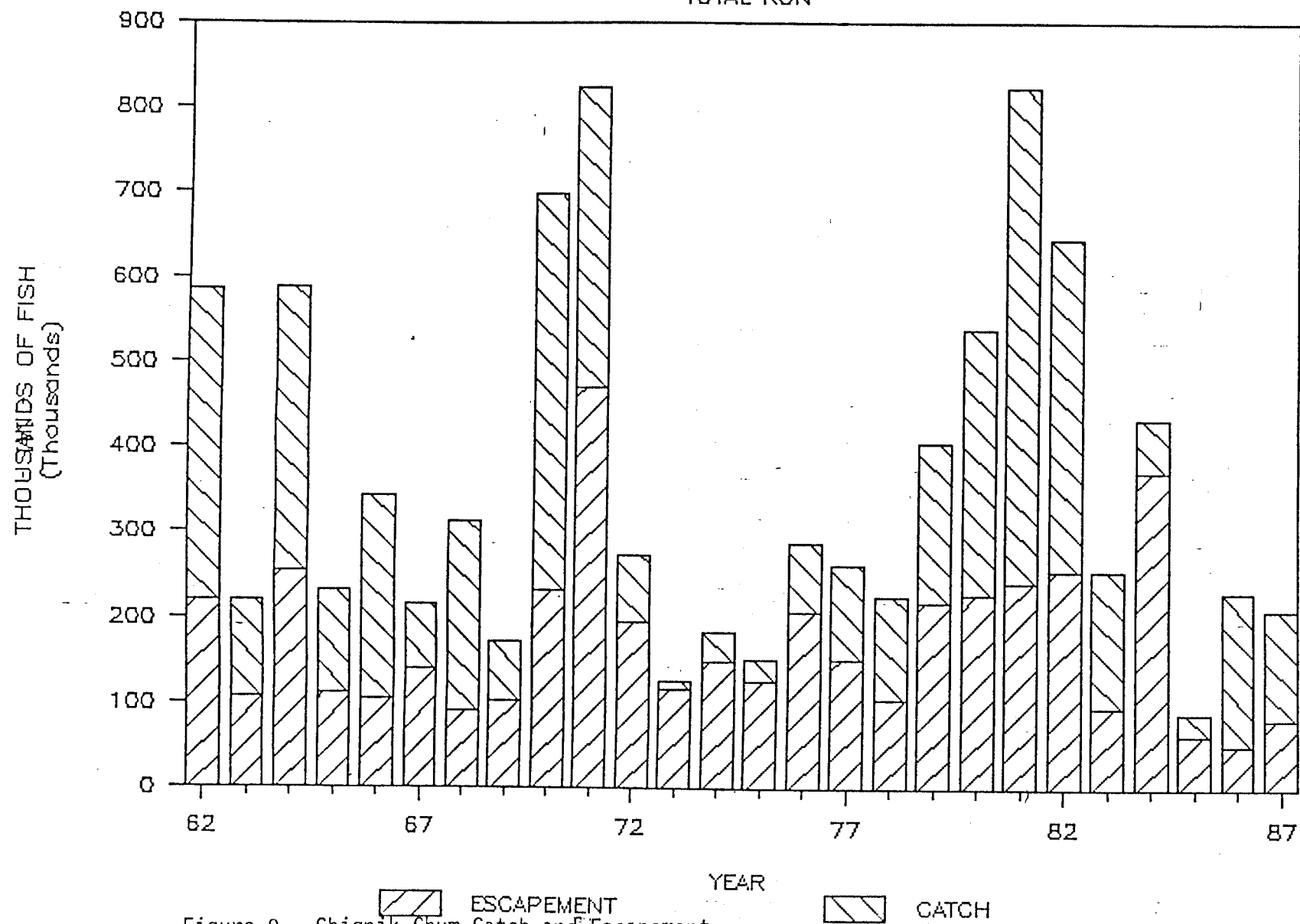


Figure 9. Chignik Chum Catch and Escapement.



Table 1.

CHIGNIK RIVER SYSTEM  
 SOCKEYE ESCAPEMENT GOALS  
 BLACK LAKE (EARLY) AND CHIGNIK LAKE (LATE) RUNS

The numbers in the escapement tables listed below were derived from averages over several years of escapements of various timing and magnitude. It should be noted that daily escapement levels will fluctuate considerably throughout the run. THE TABLES LISTED SERVE ONLY AS A GUIDE FOR ACHIEVING THE TOTAL ESCAPEMENT FOR EACH RUN. In-season variations from the figures listed may be due to variations in actual run timing and/or strength of the run.

EARLY RUN - 400,000 Minimum

June 12	40,000
14	50 - 65,000
16	75 - 100,000
18	125 - 150,000
20	175 - 200,000
22	225 - 250,000
25	275 - 325,000
30	350 - 400,000

LATE RUN - 250,000 Minimum

WHEN EARLY ESCAPEMENT IS ACHIEVED

July 6	-
8	-
10	40,000
12	50 - 60,000
14	65 - 75,000
16	80 - 90,000
19	100 - 115,000
21	125 - 135,000
23	145 - 160,000
26	170 - 180,000
29	185 - 195,000
31	195 - 200,000

WHEN EARLY RUN ESCAPEMENT IS NOT ACHIEVED

40,000
45 - 50,000
55 - 65,000
70 - 75,000
75 - 80,000
80 - 90,000
100 - 115,000
125 - 135,000
150 - 160,000
170 - 180,000
190 - 195,000
195 - 200,000

Table 2.

CHIGNIK SOCKEYE RUN CATCHES<sup>1/</sup>  
1964 - 1987  
(Number of Fish in Thousands)

	Chignik Area Catch	%	Cape Igvak Catch	%	Balboa-Stepovak <sup>8/</sup> Catch	%	Total Catch
1964 <sup>2/</sup>	561	90.63	15	2.42	43	6.95	619
1965 <sup>2/</sup>	635	90.46	11	1.57	56	7.98	702
1966 <sup>2/</sup>	225	88.24	18	7.06	12	4.71	255
1967 <sup>2/</sup>	473	91.67	23	4.46	20	3.88	516
1968 <sup>2/</sup>	878	80.92	136	12.53	71	6.54	1,085
1969 <sup>2/</sup>	310	74.70	98	23.61	7	1.69	415
1970 <sup>2/</sup>	1,426	70.04	542	26.62	68	3.34	2,036
1971 <sup>2/</sup>	1,016	76.97	253	19.17	51	3.86	1,320
1972 <sup>2/</sup>	379	86.33	42	9.57	18	4.10	439
-----							
1964-72 catch and percentage figures are total for entire season. Catch figures and percentages after 1972 are only through July 25.							
-----							
1973 <sup>3/</sup>	768	89.41	53	6.17	38	4.42	859
1974 <sup>3/</sup>	517	73.12	122	17.26	68	9.62	707
1975 <sup>3/</sup>	115	81.56	24	17.02	2	1.42	141
1976 <sup>3/</sup>	760	82.25	118	12.77	46	4.98	924
1977 <sup>3/</sup>	1,543	90.39	129	7.56	35	2.05	1,707
1978 <sup>4/5/</sup>	1,452	85.36	227	13.35	22	1.29	1,701
1979 <sup>4/6/</sup>	799	91.11	15	1.71	63	7.18	877
1980 <sup>4/6/</sup>	662	91.31	1	0.14	62	8.55	725
1981 <sup>4/6/</sup>	1,605	79.97	284	14.15	118	5.88	2,007
1982 <sup>4/6/</sup>	1,251	83.90	172	11.54	68	4.56	1,491
1983 <sup>4/6/</sup>	1,451	73.06	318	16.01	217	10.93	1,986
1984 <sup>4/6/</sup>	2,476	74.47	464	13.95	385	11.58	3,325
1985 <sup>4/7/</sup>	692	79.72	125	14.40	51	5.88	868
1986 <sup>4/7/</sup>	1,456	82.63	188	10.67	118	6.70	1,762
1987*	1,659	78.03	321	15.10	146	6.87	2,126

Footnotes are listed on following page.

\*Preliminary

Table 2. (continued)

- 1/ The Cape Igvak and Balboa-Stepovak figures represent 80% of the total sockeye catches for those areas as it is estimated that roughly 80% of the sockeye caught in the Cape Igvak section and Balboa-Stepovak are destined for Chignik.
- 2/ Prior to 1973, Cape Igvak and Balboa-Stepovak fisheries were regulated by set weekly fishing periods in the regulation book, usually 5 days per week. The situation was sometimes modified due to poor escapements at Chignik.
- 3/ During 1973 through 1977 all three fisheries were managed on a day for day basis.
- 4/ Beginning with the 1978 season, the current Cape Igvak Fishery Management Plan still in effect today was implemented. The Cape Igvak fishery was allocated 15 percent of the total Chignik destined sockeye catch.
- 5/ During 1978, seining prior to July 11 was disallowed in Beaver, Balboa, and Stepovak Bays. The set gillnet fishery was allowed to fish 3 days per week through July 10 after which the fishery was managed on the basis of local stocks.
- 6/ During 1979-84, 5 days per week were allowed at Balboa-Stepovak (including Beaver Bay) with a ceiling of 60,000 estimated Chignik destined sockeye, prior to July 11. If the Chignik Area sockeye catch was 1,000,000 or more before July 11, the 60,000 ceiling was to be dropped.
- 7/ Beginning in 1985, Balboa-Stepovak was placed on an allocation of 6.2 percent of the total estimated Chignik sockeye catch through July 25. After July 25, Balboa-Stepovak is managed on a local stock basis.
- 8/ Balboa-Stepovak includes Beaver Bay. This fishery is also referred to as the Southeastern District Mainland Fishery.

Table 3.

CHIGNIK MANAGEMENT AREA SALMON CATCHES  
1960-1987

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1960	643	715,969	8,933	557,327	486,699	1,769,571
1961	409	322,890	3,088	443,510	178,760	948,657
1962	435	364,753	1,292	1,519,305	364,335	2,250,120
1963	1,744	408,606	9,933	1,662,363	112,697	2,195,343
1964	1,099	560,703	2,735	1,682,365	333,336	2,580,238
1965	1,592	635,078	9,602	1,118,158	120,589	1,885,019
1966	636	224,615	16,050	683,215	238,883	1,163,399
1967	882	472,874	13,150	108,981	75,543	671,430
1968	674	878,449	2,200	1,290,660	223,861	2,395,844
1969	3,448	310,087	18,103	1,779,736	67,721	2,179,095
1970	1,225	1,327,664	15,348	1,287,605	464,674	3,096,516
1971	2,010	1,016,136	14,557	612,290	353,952	1,998,945
1972	464	378,669	19,615	72,240	78,356	549,344
1973	525	870,706	22,322	25,445	8,701	927,699
1974	255	662,905	12,245	70,017	34,454	779,876
1975	549	400,193	53,283	66,165	25,161	545,351
1976	763	1,135,572	35,301	388,917	80,221	1,640,774
1977	711	1,972,219	17,429	604,824	110,452	2,705,635
1978	1,603	1,576,283	20,212	985,114	120,889	2,704,101
1979	1,266	1,063,742	93,146	2,056,999	188,169	3,403,322
1980	2,325	846,356	117,862	1,125,465	312,572	2,404,580
1981	2,694	1,839,469	78,805	1,162,613	580,332	3,663,913
1982	5,236	1,521,857	300,384	873,390	390,096	3,090,963
1983	5,488	1,823,057	61,915	321,160	159,362	2,370,982
1984	4,318	2,662,449	110,128	446,184	63,408	3,286,487
1985	1,919	946,369	206,624	174,966	26,146	1,356,024
1986	3,037	1,645,834	116,633	647,125	176,640	2,589,269
1987	2,651	1,898,838	150,414	246,775	127,261	2,425,939
*avg(1960-1987)	1,736	1,017,227	54,690	786,176	196,545	2,056,373
*avg(1976-1987)	2,668	1,577,670	109,071	752,794	194,629	2,636,832

APPENDIX B  
1987 SALMON MANAGEMENT PLAN

1987  
MANAGEMENT PLAN

For the

CHIGNIK MANAGEMENT AREA

COMMERCIAL SALMON FISHERY

## TABLE OF CONTENTS

A) 1987 MANAGEMENT PLAN	<u>Page</u>
I. Sockeye Salmon.....	1
II. Pink and Chum Salmon.....	2
III. Eastern District Salmon Management Plan.....	2
IV. Coho Salmon.....	4
B) APPENDIX	
I. Chignik Area Statistical Chart for Salmon & Herring.....	5
II. Chignik River System - Escapement Goals.....	6
III. Impact of Cape Igvak and Balboa-Stepovak Catches on Sockeye Destined for Chignik (1964-1986).....	7
IV. Management Plan - Cape Igvak.....	8
V. Management Plan - Southeastern District (Balboa-Stepovak).....	10

1987 CHIGNIK AREA  
SALMON MANAGEMENT PLAN

The following statements are intended as a guideline for managing the 1987 Chignik salmon runs. As in the past, frequent in-season emergency order adjustments will be made when necessary as the runs develop. No statements contained in this management plan in regards to numbers of fish or fishing time should be taken as a guarantee.

SOCKEYE SALMON

The total sockeye salmon run is forecast to be approximately 3.10 million fish. The early run is expected to be the stronger of the two with an expected 1.80 million total return. The minimum escapement goal on the early run is 400,000 fish, therefore the projected harvest will be 1.40 million sockeye. The total late run return is expected to be 1.30 million fish. The late run minimum escapement goal is 250,000 which should allow a commercial harvest of approximately 1.05 million fish. Total estimated harvest for both runs should be 2.45 million fish, which includes fish that may be intercepted outside the Chignik area.

The first day of fishing could be as early as June 1 by regulation. However, compared to past years this would be highly unlikely, and only implemented if a minimum of 40,000 sockeye salmon have passed the weir and a strong buildup of fish in the lagoon is indicated by test fishing. The average opening for commercial fishing based on the past 10 years is June 10. Additional openings will be based on escapements, fishery performance and test fishing results.

During the month of June, commercial fishery openings will be confined to the Chignik Bay District, Central District, and the Eastern District.

As adopted by the Board of Fisheries, the Eastern district will open and close to commercial salmon fishing simultaneously with the Chignik Bay and Central districts. The Eastern district may close to commercial salmon fishing during the overlap period, in late June and early July.



The Eastern district or portions thereof will close to commercial salmon fishing on July 15 until further notice. This will allow both local pink and chum salmon run strengths to be evaluated before a commercial harvest occurs.

If at any time it is determined that stocks being harvested within the Eastern district are not primarily Chignik stocks, the fishery in this district will be closed by emergency order.

The fisheries in the Cape Igvak section of the Kodiak area and the Southeastern district of the Alaska Peninsula are known to intercept Chignik sockeye salmon. The Cape Igvak Management Plan and the Southeastern District Management Plan as adopted by the Alaska Board of Fisheries will be used to manage those fisheries.

#### PINK AND CHUM SALMON

For the 1987 commercial salmon season a total pink salmon return of 1.4 million fish is forecast. The pink salmon escapement goal for the entire Chignik management area is 700,000 which could provide a commercial harvest of approximately .70 million pink salmon (range of harvest estimate 0.00 - 1.80 million) provided the return is as forecast and the run is well distributed.

Due to this forecast return of pink salmon into the Chignik Management area waters, the Western and Perryville Districts may open as early as July 5 to target specifically on pink and chum salmon. The first opening in these westward districts will coincide with the first July sockeye opening targeting on the late sockeye (Chignik Lake stock) run bound for the Chignik system. Management of the Eastern District will be as outlined in the 1987 Commercial Finfish regulation booklet which is stated below.

5AAC 15.360. EASTERN DISTRICT SALMON MANAGEMENT PLAN. (a) The department shall open and close the Eastern District for commercial salmon fishing concurrently with the Chignik Bay and Central Districts. The department may close the Eastern District for the period between the first (Black Lake) and second (Chignik Lake) sockeye salmon runs.

(b) The department shall close the Eastern District if it is determined that the salmon being harvested in that district are from stocks that do not originate from spawning areas located in the Chignik Area.

The projected chum salmon harvest for Chignik waters is estimated at 200,000. Based on return per spawner data and the good chum escapement for the brood years 1982 and 1983 it is anticipated that the overall return will come in as projected, providing good potential for commercial fisheries in the major chum salmon producing bays of the Chignik Area. Intense aerial surveys will be conducted in these areas to monitor the progress of the bay specific runs in hopes of assuring optimum opportunity to harvest the surplus when the fish are in their best marketable condition. There is good potential for area specific openings and a 24 hour notice will be given prior to a commercial opening. Openings and closures will broadcast over 4125 SSB and CH 6 VHF.

Processors within the Chignik area and Kodiak based tenders that purchase fish from the Chignik salmon fleet, process these fish primarily for the fresh frozen market. Due to the higher quality standards of commercially caught salmon for the frozen market there will be greater demands placed on management to harvest the surplus when these fish are in their optimum condition. Past management practices of allowing the fish to reach terminal areas, assure the escapement goal and then harvest the surplus will not be appropriate due to the fact that the majority of the fish would be water marked and probably not suitable for the fresh frozen market. Management strategies will have to be adjusted to harvest fish as they migrate to their home streams, i.e. increased early fishing effort in all management districts when a large harvestable surplus is forecast. This is consistent with salmon management strategies for the remainder of the region.

Management of the Central District will coincide with the Chignik Bay District where emphasis will be on sockeye salmon returning to the Chignik River systems.

Due to the economic and commercial importance of the Chignik sockeye salmon, the corresponding run timing and strength of the two sockeye salmon runs bound to the Chignik River systems i.e. Black Lake (Early Run) and Chignik Lake (Late run) will directly effect commercial opening times within the Eastern, Western and Perryville Districts.

If the strength of the early run (Black Lake) sockeye salmon turns out to be much weaker than forecast and the escapement goal of 400,000 through the Chignik River weir is not obtained, then the early July openings in all waters where sockeye would be intercepted will be curtailed. Commercial openings during the transition period between the two sockeye salmon runs (June 26 to July 9) will also be closely monitored to allow an adequate evaluation of the second run (Chignik Lake) run's strength so as to assure the escapement goal of 250,000.

#### Coho Salmon

Fall fisheries aimed primarily at coho and late sockeye will begin in mid August through mid September provided there is no conflict in attaining escapement goals for the late sockeye run to Chignik Lake. The estimated coho harvest in 1987 is projected at 110,000. The majority of this harvest should come from Chignik Lagoon. The average coho harvest for the past 10 years is 112,000 fish.

Management of Chignik Bay District coho stocks will be similar to those methods implemented in recent past years. Management of smaller systems, particularly those in the Eastern district, will probably continue to be conservative in order to prevent excess harvest of these systems during the current developmental phase of Chignik commercial coho fisheries.

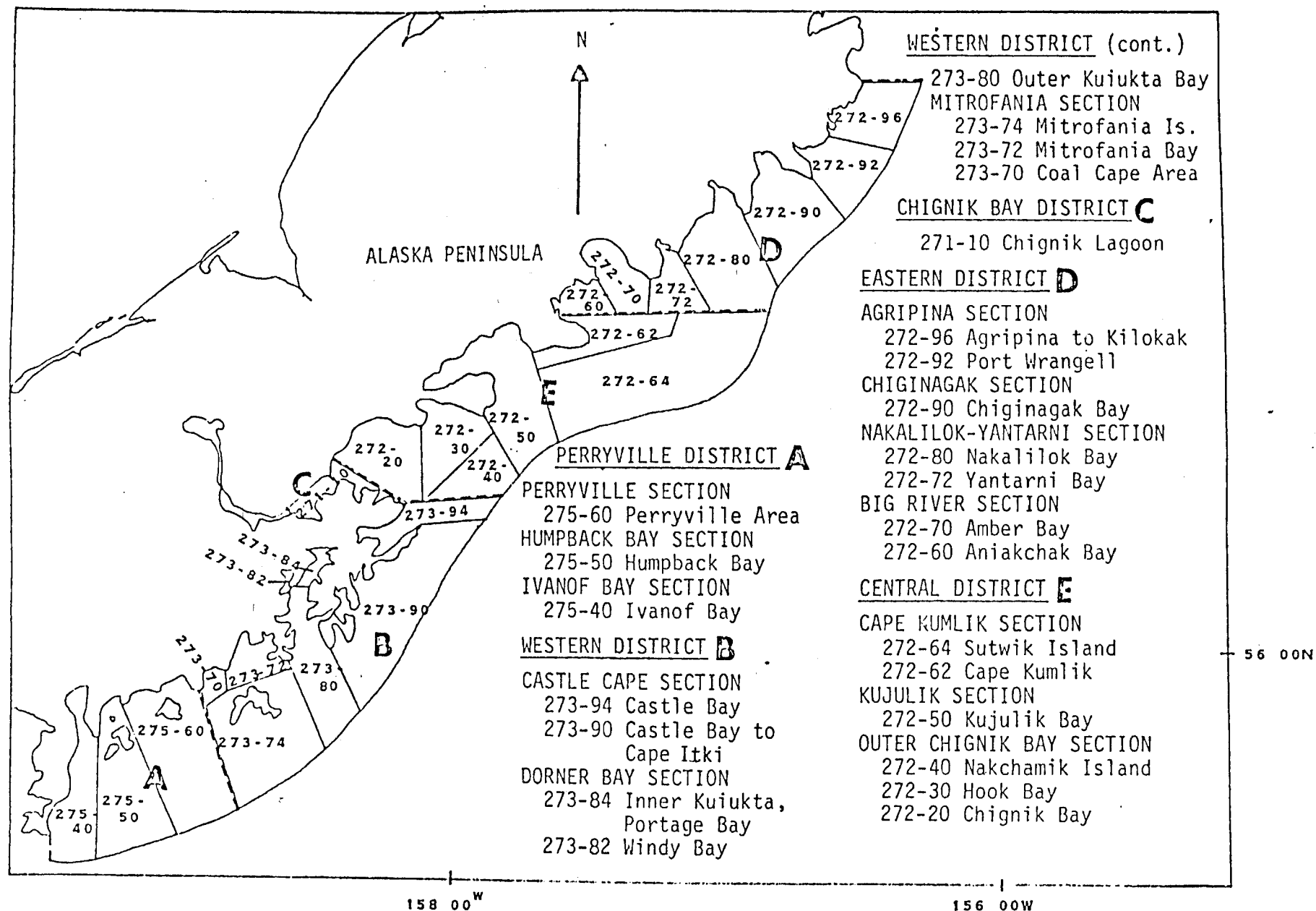


Figure 1. Map of statistical sub-districts in the Chignik management area.

CHIGNIK RIVER SYSTEM  
 SOCKEYE ESCAPEMENT GOALS  
 BLACK LAKE (EARLY RUN) AND CHIGNIK LAKE (LATE RUN)

The numbers in the escapement tables listed below were derived from averages over several years of escapements of various timing and magnitude. It should be noted that daily escapement levels will fluctuate considerably throughout the run. THE TABLES LISTED SERVE ONLY AS A GUIDE FOR ACHIEVING THE TOTAL ESCAPEMENT FOR EACH RUN. In-season variations from the figures listed may be due to variations in actual run timing and/or strength of the run.

EARLY RUN - 400,000 Minimum

June 12	40,000
14	50 - 65,000
16	75 - 100,000
18	125 - 150,000
20	175 - 200,000
22	225 - 250,000
25	275 - 325,000
30	350 - 400,000

LATE RUN - 250,000 Minimum

WHEN EARLY RUN ESC. IS ACHIEVED    WHEN EARLY RUN ESC. IS NOT ACHIEVED

July 6	-	40,000
8	-	45 - 50,000
10	40,000	55 - 65,000
12	50 - 60,000	70 - 75,000
14	65 - 75,000	75 - 80,000
16	80 - 90,000	80 - 90,000
19	100 - 115,000	100 - 115,000
21	125 - 135,000	125 - 135,000
23	145 - 160,000	150 - 160,000
26	170 - 180,000	170 - 180,000
29	185 - 195,000	190 - 195,000
31	195 - 200,000	195 - 200,000

Table 1. Impact of Cape Igvak and Balboa-Stepovak catches on sockeye salmon catches destined for Chignik 1964-1986 (number of fish in thousands).

Year	Chignik Area		Cape Igvak		Balboa-Step.		TOTAL CATCH	TOTAL RUN
	Escape.	Catch (%)	Catch	(%)	Catch	(%)		
1964	304	561 90.63%	15	2.42%	43	6.95%	619	923
1965	470	635 90.46%	11	1.57%	56	7.98%	702	1172
1966	567	225 38.24%	18	7.06%	12	4.71%	255	822
1967	517	473 91.67%	23	4.46%	20	3.88%	516	1033
1968	587	878 90.92%	136	12.53%	71	6.54%	1085	1672
1969	499	310 74.70%	98	23.61%	7	1.69%	415	914
1970	558	1428 70.04%	542	26.62%	68	3.34%	2036	2692
1971	904	1016 76.97%	253	19.17%	51	3.86%	1320	2224
1972	558	379 86.33%	42	9.57%	18	4.10%	439	997

Catch figures 1973-1986 are total catch figures through JULY 25.

CATCH THROUGH JULY 25

1973	780	768 88.99%	57	6.60%	38	4.40%	863	1643
1974	664	517 73.13%	122	17.26%	68	9.62%	707	1371
1975	577	115 81.56%	24	17.02%	2	1.42%	141	718
1976	821	760 82.25%	118	12.77%	46	4.98%	924	1745
1977	734	1547 90.41%	129	7.54%	35	2.05%	1711	2445
1978	681	1454 85.38%	227	13.33%	22	1.29%	1703	2384
1979	738	589 88.31%	15	2.25%	63	9.45%	667	1405
1980	664	669 91.39%	1	0.14%	82	8.47%	732	1396
1981	831	1605 79.97%	284	14.15%	118	5.88%	2007	2838
1982	838	1251 83.90%	172	11.54%	68	4.56%	1491	2329
1983	855	1451 73.06%	318	16.01%	217	10.93%	1986	2841
1984	866	2476 73.65%	464	13.80%	422	12.55%	3362	4228
1985	717	692 79.72%	125	14.40%	51	5.88%	868	1585
1986	816	1456 82.63%	188	10.67%	118	6.70%	1762	2578

1) The Cape Igvak and Balboa-Stepovak catch figures represent 80% of the total sockeye catches for these areas. It is estimated that approximately 80% of the sockeye intercepted in the Cape Igvak and Balboa-Stepovak areas are destined for Chignik.

2) The percentages presented represent the percent of the total Chignik sockeye catch thru 25 July. (see footnote 3).

3) According to the Cape Igvak and the Southeastern District salmon management plans, adopted by the State Board of Fisheries, sockeye salmon caught after 25 July will not be used in computing the appropriate catch percentages.

MANAGEMENT GUIDE FOR THE  
1987  
CAPE IGVAK FISHERY

The midpoint harvest figures for the 1987 Chignik sockeye run are forecast to be 1.4 million for the first run and 1.05 million fish for the second run, or a projected total harvest of 2.45 million Chignik bound sockeye.

The Department will manage the Cape Igvak fishery according to the plan adopted by the Board of Fisheries. Since the harvestable surplus beyond the escapement goals is expected to be more than 600,000, the fishery at Cape Igvak can open when the fishery opens at Chignik, and it is possible that the first opening could be as early as June 5. Approximately 48 hours notice will be given prior to the first Cape Igvak opening. At least a 24 hour notice will be given prior to the opening of any other fishing period, unless it is an extension of a fishing period in progress. Fishing periods will normally be at least 24 hours long and will begin at 12:01 a.m. If the first run fails, the Cape Igvak fishery will be curtailed in order to allow a minimum harvest in the Chignik area of at least 300,000 sockeye through July 8 if that many are surplus beyond escapement needs.

During the period from approximately June 26 to July 9, the strength of the second run of Chignik River system sockeye salmon cannot be evaluated at Chignik Lagoon. In order to prevent overharvest of the second run, commercial salmon fishing in the Cape Igvak section will, at the department's discretion, be disallowed or severely restricted during this period.

Fishing time at Cape Igvak after July 8 will be dependent on the strength of the second run and on the Chignik area catch during the first run. When the second run appears strong enough for a fishery at Chignik, Cape Igvak could be opened only if at least 300,000 were harvested from the first run in the Chignik area. The Department will then manage the fishery so that the number of sockeye salmon harvested in the Chignik area for both runs combined will be at least 600,000 and the harvest in the Cape Igvak section will approach as near as possible 15 percent of the total catch of Chignik bound sockeye, if that many fish are available surplus to the escapement needs.

The Cape Igvak fishery will be managed according to the plan as stated in the regulation book. No attempt will be made to allow equal fishing time with Chignik, as had been done at one time, but rather the end goal will be to meet the 15%\* allocation level after the safeguards\*\* of the plan have been satisfied. In order to meet the goal of 15% by July 25, the percentage may fluctuate above or below 15% prior to July 25.

Because of the many restrictions placed upon the fishery at Cape Igvak in order to safeguard the Chignik runs, it may not be possible to achieve a 15% catch level even though the minimum catch level of 600,000 at Chignik is exceeded.

\* The formula for determining the Cape Igvak harvest percentage is described in 5 AAC 18.360 (d) in the Commercial Finfish Regulation Book.

\*\* Safeguards include daily escapement goals at Chignik and restrictive fishing time in the Cape Igvak section during the June 26 to July 9 overlap period.



1987  
SOUTHEASTERN DISTRICT MAINLAND SALMON MANAGEMENT PLAN  
ALASKA PENINSULA AREA

The Department will manage the fishery according to the Southeastern District Management Plan adopted by the Board of Fisheries. The Southeastern District Management Plan affects the Beaver Bay and Balboa Bay sections plus that portion of the East and West Stepovak sections located south of a line from Renshaw Point to Osterback Creek.

That portion of the East and West Stepovak sections located north of a line from Renshaw Point to Osterback Creek will be managed on a local stock basis. When possible, fishing time in this location will coincide with other nearby fisheries to avoid concentrating fishing gear.

Set gillnets are the only legal gear allowed in the Beaver Bay, Balboa Bay, West Stepovak, East Stepovak, and General (Southeastern district) sections through July 10. After July 10, set gillnets, purse seines, and hand purse seines are legal.

That portion of the area (Southeastern District Mainland and Beaver Bay section not enclosed by a line from Renshaw Point to Osterback Creek) covered by the Southeastern District Management Plan will be managed on the basis of Chignik sockeye stocks through July 25. After July 25, the whole area will be managed for local stocks.

The midpoint harvest figures for the Chignik sockeye returns during 1987 are forecast to be 1.4 million for the early run and 1.05 million for the second run.

Since the harvestable surplus beyond the escapement goals is expected to be more than 600,000, the Southeast Mainland fishery can open when the fishery opens at Chignik. Based on the strong forecast, it is possible that the first opening could be as early as June 5. Approximately 48 hours notice will be

given prior to the first opening in the Southeast Mainland fishery. At least a 24 hour notice will be given prior to the opening of any other fishing period, unless it is an extension of a fishing period in progress. If the first run fails, the Southeast Mainland Fishery will be curtailed in order to allow a minimum harvest in the Chignik area of at least 300,000 sockeye through July 8 if that many are surplus to the escapement needs.

During the period from approximately June 26 to July 9, the strength of the second run of Chignik River system sockeye salmon cannot be evaluated at Chignik Lagoon. In order to prevent overharvest of the second run, commercial salmon fishing in the Southeast Mainland will, in the Department's discretion, be disallowed or severely restricted during this period.

Fishing time in the Southeast Mainland after July 8 will be dependent on the strength of the second run and on the Chignik area catch during the first run. When the second run appears strong enough for a fishery at Chignik, the Southeast Mainland could be opened only if at least 300,000 were harvested from the first run in the Chignik area. The department will then manage the fishery whereby the number of sockeye salmon harvested in the Chignik area on both runs combined will be at least 600,000 and the harvest in the Southeast Mainland will approach as near as possible 6.2 percent of the total Chignik sockeye salmon catch, if that many fish are available surplus to the escapement needs.

At the December 1982 meeting, the Board of Fisheries adopted the following regulation pertaining to fishery management plans:

#### 5 AAC 39.200 APPLICATION OF FISHERY MANAGEMENT PLANS.

(b) In some fishery management plans, the distribution of harvestable fish between various users is determined by the harvest that occurs during a specific time period, at a specific location or by a specific group or groups of users. At times fishermen, due to circumstances that are beyond the control of the Department, such as weather or price disputes, will not harvest fish. When this happens in a fishery governed by a management plan the goals of that plan may not be achieved. Therefore, when a fishery is open to the taking of fish and the group or groups of users whose catch determines the distribution of the harvest as set out in

the applicable management plan is not taking the harvestable fish available to them, the Department shall manage the fishery as if the available harvest is being taken. When determining the available harvest, the Department shall consider the number of fish needed to meet spawning requirements, the number of fish present in the fishery and in spawning areas that are in excess to spawning requirements and the estimated harvesting capacity of the group or groups of users that would normally participate in the fishery.

The fishery will be managed according to the plan as stated in the 1987 regulation book. No attempt will be made to allow equal fishing time with Chignik, as had been done at one time, but rather the end goal will be to meet the 6.2%<sup>1/</sup> catch level after the conditions<sup>2/</sup> of the plan have been satisfied. In order to meet the goal of 6.2% by July 25, the percentage will fluctuate above or below 6.2% prior to July 25.

Because of the many restrictions placed upon the Southeast Mainland fishery in order to safeguard the Chignik runs, it may not be possible to achieve a 6.2% catch level even though the minimum catch level of 600,000 at Chignik is exceeded.

<sup>1/</sup> The total Chignik sockeye salmon catch constitutes those sockeye salmon caught within the Chignik area plus 80 percent of the sockeye salmon caught in the Cape Igvak section of the Kodiak area plus 80 percent of the sockeye caught in the Southeast Mainland fishery outside of the Suzy Creek to Dent Point portion. The Board of Fisheries actually allocated 5.7% to the Southeast Mainland, which is the figure listed in the regulation book. However it was later discovered that the 5.7 figure was derived from incorrect information and that the percentage should actually be 6.2. The Board directed the Department to manage for the 6.2 percent figure, but was unable to legally have this reflected in the regulation book.

<sup>2/</sup> Conditions include daily escapement goals at Chignik, a minimum Chignik sockeye harvest for each run, and restrictive fishing time in the Cape Igvak section and Southeast Mainland during the June 26 to July 9 overlap period. The total minimum harvest for Chignik is listed under 5 AAC 09.360 on pages 32 and 33 in the 1987 Commercial Fish Regulation booklet.

APPENDIX C  
1987 HERRING REPORT TO THE BOARD

CHIGNIK MANAGEMENT AREA  
HERRING SAC-ROE FISHERY

Report to the Board of Fisheries  
December 1987

Submitted by:

Pete Probasco  
Chignik Area Management Biologist

Jeff Fox  
Chignik Fisheries Biologist

Alaska Department of Fish and Game  
Division of Commercial Fisheries  
211 Mission Road  
Kodiak, Alaska 99615

## TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	
DESCRIPTION OF AREA.....	1
FISHERY HISTORY.....	1
MANAGEMENT STRATEGY.....	1
Sac-Roe Fishery.....	1
Food/Bait Fishery.....	2
1987 SEASON SUMMARY	
INDUSTRY SUMMARY.....	2
ADF&G SUMMARY.....	3
1988 HERRING MANAGEMENT PLANS/ISSUES.....	3
LIST OF FIGURES	
Figure 1. Map Chignik Management Area.....	5
Figure 2. Map Major Herring Stocks.....	6
Figure 3. Chignik Herring Harvests 1980-1987.....	7

## INTRODUCTION

### Description of Area

The Chignik Management area lies on the south side of the Alaska Peninsula between the Kodiak area to the east and the South Peninsula/Aleutian Islands area to the west, Kilokak Rocks is the eastern boundary and Kupreanof Point is the western boundary (Fig. 1). The area is subdivided into five districts: the Eastern, Central, Chignik Bay, Western and Perryville.

### History of the Herring Fishery

Historical Chignik herring fishery information was combined with the North and South Peninsula areas and entered under the Southwestern Alaska herring fishery. The earliest recorded commercial herring fishing took place in 1906. Total annual catches for the early 1900's did not exceed one million pounds (500 tons) for the Southwestern Alaska herring fishery. A small herring saltery was operated at Lake Bay in the Chignik Bay district in the early 1930's. The herring were beach seined and salted in barrels for resale. No further breakdown of catch by bays is available. The fishery slowed to a halt in the late 1930's and was not fished again until 1980, when the sac roe fishery commenced.

The recent herring fisheries within the Chignik area began in 1980 and have targeted on sac-roe herring. At this time the fishery may not be totally developed, however, recent trends in exploration and effort levels suggest that it will continue to be a relatively low participation, low yield fishery.

### Management Strategy

#### Sac-Roe Fishery

Several relatively small geographic areas have been identified throughout the past eight years as supporting the majority of Chignik's herring spawning biomass, these small areas are managed as discrete stocks (Figure 2).

The annual harvest for each known stock is dependent upon the previous year's post-fishery biomass estimates and an exploitation rate of 0-20% of the available spawning biomass. The desired exploitation rate depends upon an evaluation of each stock's status as to trends in biomass, recruitment, and overall age composition. By regulation, the sac-roe season extends from 15 April through 30 June. In-season management further regulates the fishery by allowing alternating 24 hour fishing periods, between 24 hour closures. Each fishing period will begin at 12:00 noon on odd numbered days throughout the regulatory season or until the desired harvest level is achieved for each geographic area (stock). Pre-season harvest expectations for each stock may differ from the actual harvest levels if in-season fishery and stock performance indicate major changes in the health of any given stock.

The fishery is monitored by means of frequent contact with fishermen and frequent aerial observations of the fishery and the available herring stocks, as well as daily contact with processors and ADF&G field crews which are strategically placed to monitor this freely roaming fishery.

#### Food/Bait Fishery

Although the sac-roe fishery is currently the priority herring fishery, the excess allowable harvest which is not taken in the sac-roe fishery can be taken as food or bait. The regulatory food/bait season occurs from 15 August through 28 February. During the sac-roe fisheries' history there has been no food/bait landings in the Chignik area.

For additional information on herring regulations please consult the 1987 Finfish Regulation booklet. °

#### 1987 Season Summary

##### Industry Summary

1987 was the eighth consecutive year a sac-roe fishery occurred in the Chignik Management Area. The 1987 harvest totaled an estimated 74.87 tons. This is the largest harvest in the Chignik Area since 1983 (Figure 3). The majority of this harvest (40 tons) was taken from the Agripina Section of the Eastern



District. The remainder of the harvest was from the Chignik Bay District (15.6 tons), Castle Bay Section of the Western District (8.2 tons), and the Ivanof Bay Section of the Perryville District (11.0 tons). The estimated harvest of nearly 75 tons represents an increase over the harvest level of 1985 and 1986 but is only approximately 10% of the harvest of 1980. The reason for this is the depleted stocks of the Chignik Area as a whole and more specifically of the Big River Section of the Eastern District which remained closed to herring fishing again in 1987, but yielded 238 tons in 1980. Catches and biomass estimates have declined since that time.

The estimated ex-vessel value for the 1987 herring season in the Chignik Area is \$61,000. A total of six deliveries were made by four boats. This represents an average of \$15,250 per boat.

#### 1987 ADF&G Summary

Principal activities of ADF&G during the 1987 season were to monitor the status of previously exploited stocks. This was the first year since the inception of the sac-roe fishery in 1980 that ADF&G did not station a field crew in the Big River Section of the Eastern District. This was due to budgetary constraints as well as personnel shortages. One field person was stationed in Anchorage Bay at the Chignik Pride cannery to monitor catches and take samples for sex, age and length. A total of 123 fish were sampled from Lake Bay and Anchorage Bay. A total of 88.6% of the herring sampled were 3 and 4 year olds.

Few aerial surveys were conducted for herring biomass estimation in 1987 due to budget limitations. There were also few reports of sightings of any magnitude from commercial fishermen or the public at large. The largest sightings came from the Western and Perryville Districts with very little reported in any other district except Anchorage Bay of the Chignik Bay District.

#### 1988 Herring Management Plan and Issues

The 1987 season represented the fifth year in a row of depressed herring catches. While the 1987 harvest was higher than it had been since 1983, it is still depressed compared to the harvest before 1983. For the 1988 season a very conservative management approach will again be implemented for known

production areas. In particular, the Big River Section will continue to remain closed until a healthy stock is present to warrant commercial exploitation. The remainder of the guideline harvest levels of the Chignik Area will remain as they were in 1987.

FIGURE 1. THE CHIGNIK MANAGEMENT AREA

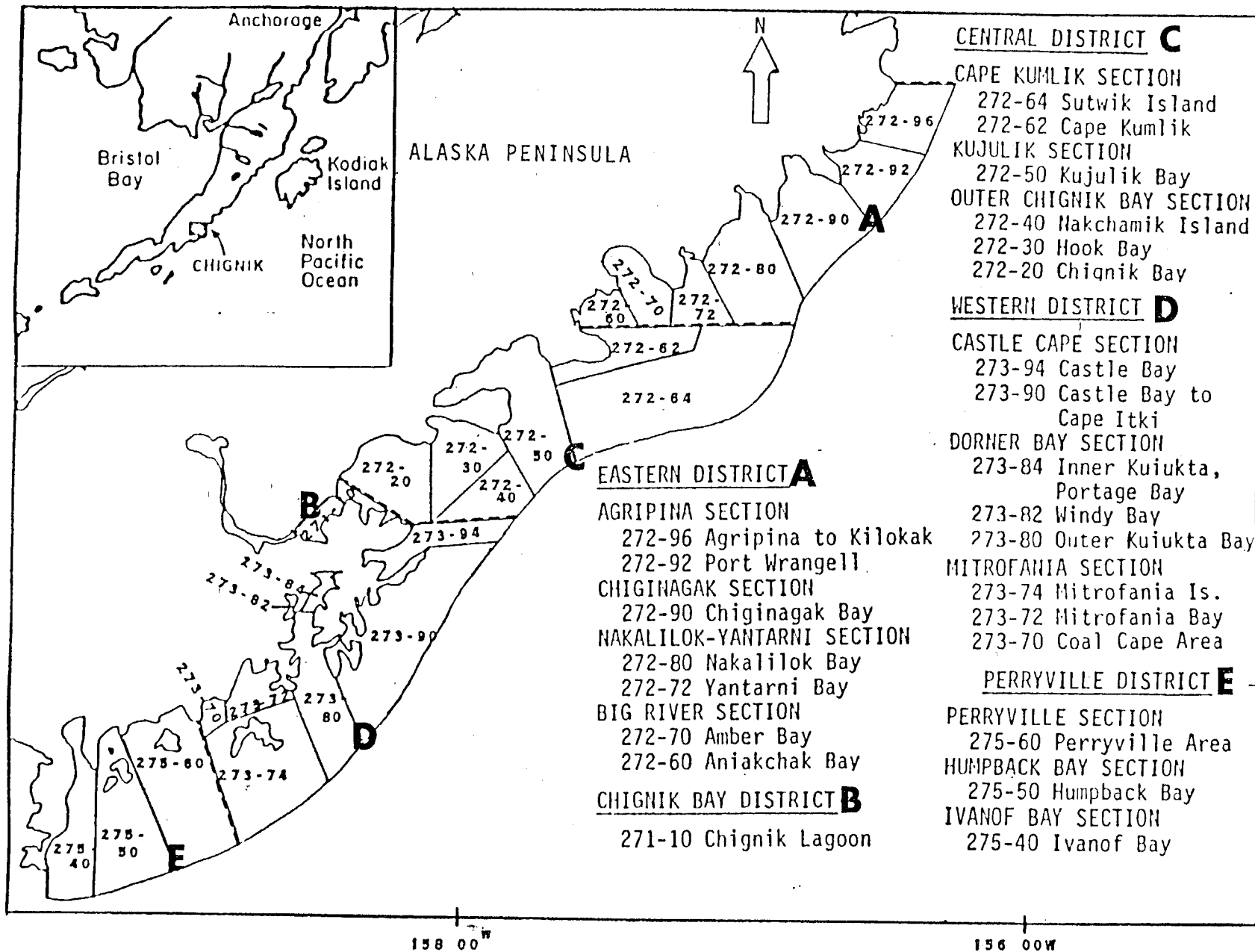


Figure 2. Chignik Area Herring Stocks

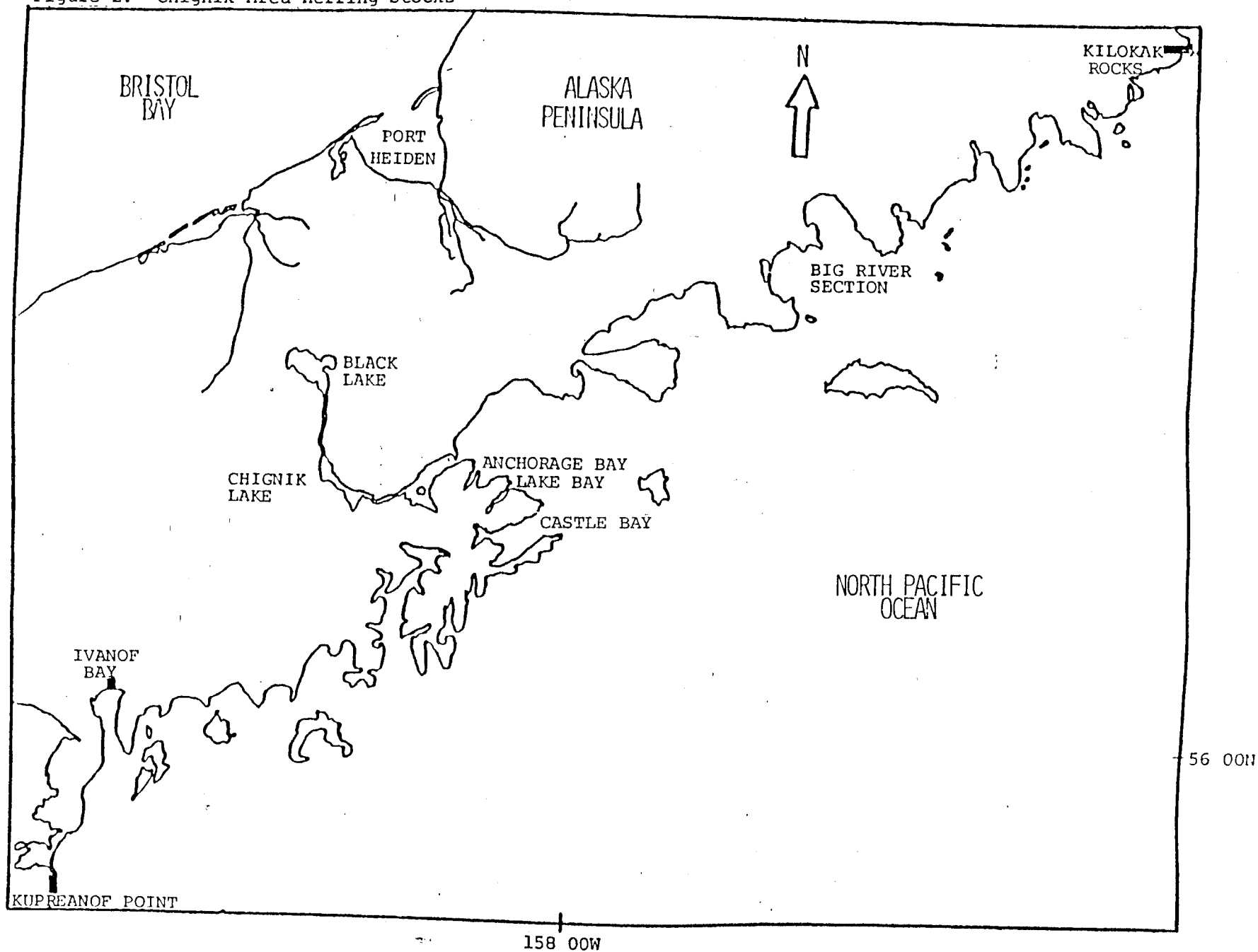
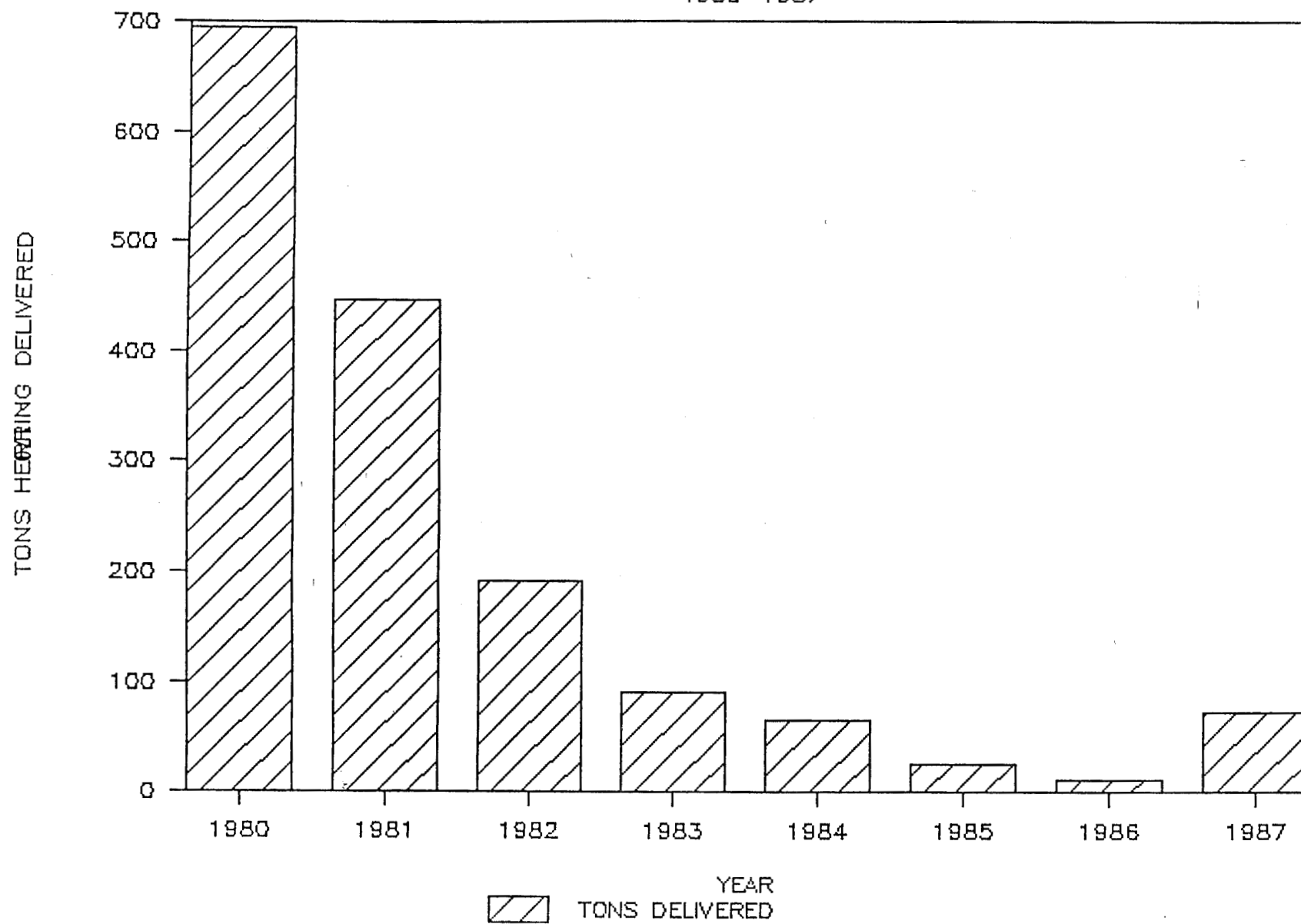


Figure 3.

# CHIGNIK HERRING HARVESTS

1980-1987



APPENDIX D.  
1987  
MANAGEMENT PLAN  
FOR THE  
CHIGNIK MANAGEMENT AREA  
HERRING SAC-ROE FISHERY

## TABLE OF CONTENTS

	<u>Page</u>
 A. INTRODUCTION	
I. Area Description.....	1
II. Fishery History.....	1
III. Management Strategy - General.....	1
 B. 1987 MANAGEMENT PLAN	
I. Registration Requirements.....	5
II. New Regulations.....	5
III. Guideline Harvest Levels.....	5
IV. Fishing Seasons.....	6
V. Fishing Periods.....	6
VI. Airplanes.....	6
VII. Legal Herring Gear.....	6
VIII. Tender and Processor Reporting Requirements.....	6
IX. 1987 Management Strategy.....	7
X. Fisheries Monitoring.....	8
 C. APPENDIX	
Figure 1. Chignik Management Area Major Herring Stocks.....	2
Figure 2. Chignik Statistical Areas.....	3
Table 1. Guideline Harvest Levels Chignik Management Area...	9

## INTRODUCTION

### Description of Area

The Chignik Management area lies on the south side of the Alaska Peninsula between the Kodiak area to the east and the Alaska Peninsula area to the west. Kilokak Rocks is the eastern boundary and Kupreanof Point is the western boundary (Fig. 1). The area is subdivided into five districts: the Eastern, Central, Chignik Bay, Western and Perryville (Figure 2).

### History of the Herring Fishery

Historical Chignik herring fishery information was combined with the North and South Peninsula areas and entered under the Southwestern Alaska herring fishery. The earliest recorded commercial herring fishing took place in 1906. Total annual catches for the early 1900's did not exceed one million pounds (500 tons) for the Southwestern Alaska herring fishery. A small herring saltery was operated at Lake Bay in the Chignik Bay district in the early 1930's. The herring were beach seined and salted in barrels for resale. No further breakdown of catch by bays is available. The fishery slowed to a halt in the late 1930's and was not fished again until 1980, when the sac roe fishery commenced.

The recent herring fisheries within the Chignik area began in 1980 and have targeted on sac-roe herring. At this time the fishery may not be totally developed, however, recent trends in exploration and effort levels suggest that it will continue to be a relatively low participation, low yield fishery.

### Management Strategy

#### Sac-Roe Fishery

Several relatively small geographic areas have been identified throughout the past seven years as supporting the majority of Chignik's herring spawning biomass, these small areas are managed as discrete stocks.



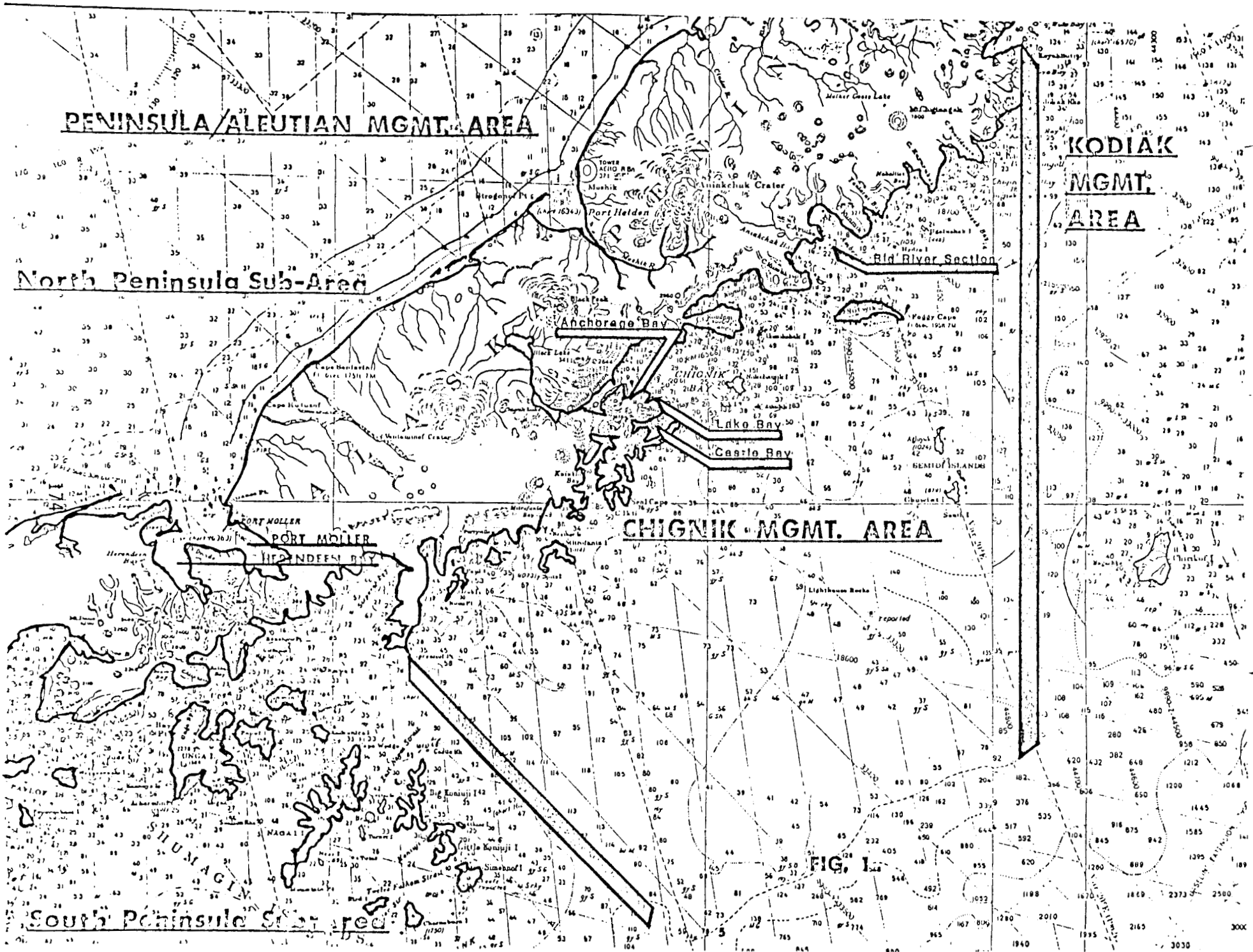
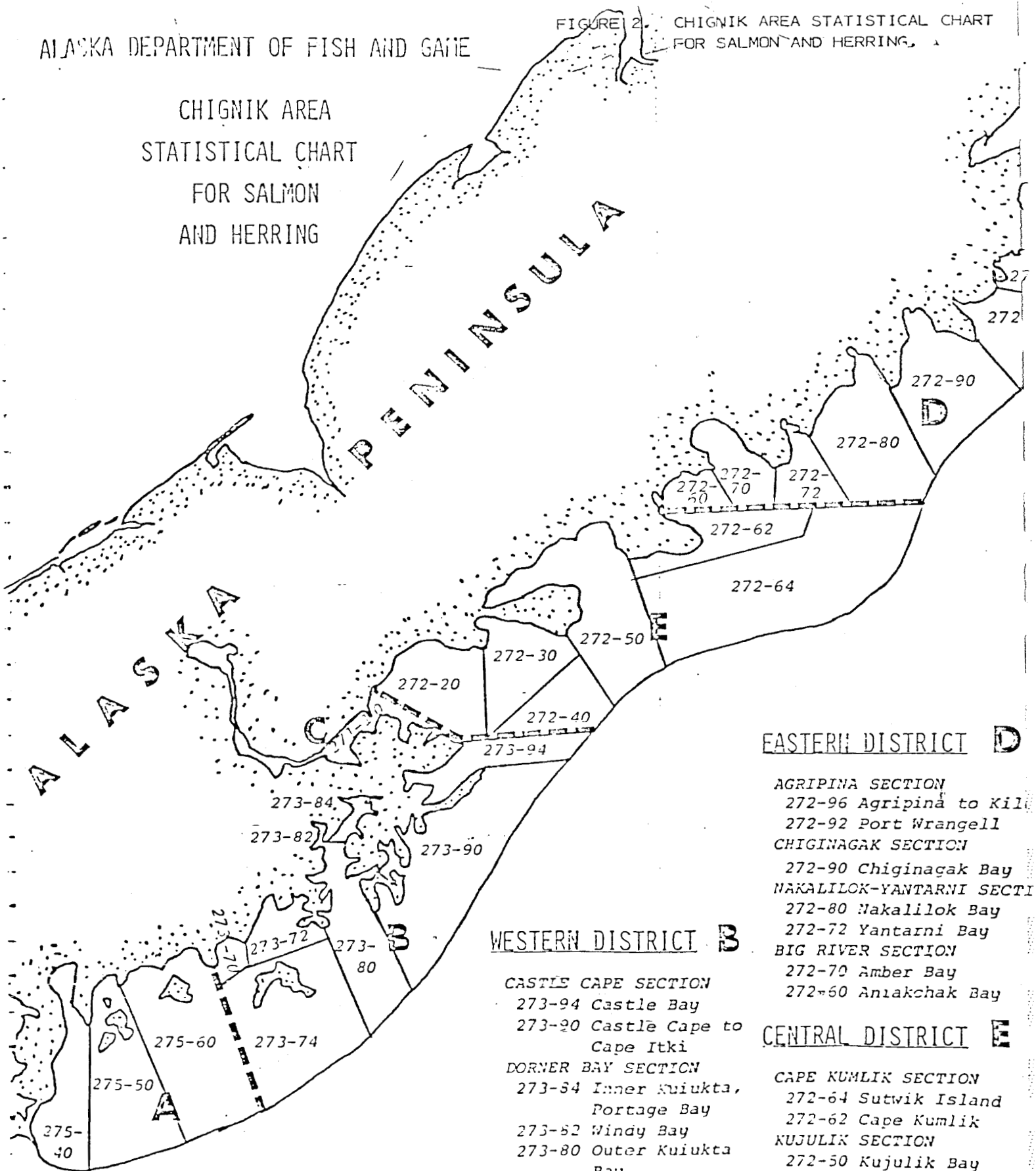


FIGURE 1. MAP SHOWING THE OUTLINE OF THE

# ALASKA DEPARTMENT OF FISH AND GAME

## CHIGNIK AREA STATISTICAL CHART FOR SALMON AND HERRING

FIGURE 2. CHIGNIK AREA STATISTICAL CHART  
FOR SALMON AND HERRING.



### EASTERN DISTRICT D

- AGRIPINA SECTION  
272-96 Agripina to Kil  
272-92 Port Wrangell  
CHIGINAGAK SECTION  
272-90 Chiginagak Bay  
NAKALILOK-YANTARNI SECTI  
272-80 Nakalilok Bay  
272-72 Yantarni Bay  
BIG RIVER SECTION  
272-70 Amber Bay  
272-60 Aniakchak Bay

### CENTRAL DISTRICT E

- CAPE KUMLIK SECTION  
272-64 Sutwik Island  
272-62 Cape Kumlik  
KUJULIK SECTION  
272-50 Kujulik Bay  
OUTER CHIGNIK BAY SECTIC  
272-40 Nakchamik Island  
272-30 Hook Bay  
272-20 Chignik Bay

### WESTERN DISTRICT B

- CASTLE CAPE SECTION  
273-94 Castle Bay  
273-90 Castle Cape to  
Cape Iteki  
DORNER BAY SECTION  
273-84 Inner Kuiuukta,  
Portage Bay  
273-82 Windy Bay  
273-80 Outer Kuiuukta  
Bay  
MITROFANIA SECTION  
273-74 Mitrofania Is.  
273-72 Mitrofania Bay  
273-70 Coal Cape Area

### CHIGNIK BAY DISTRICT C

### PERRYVILLE DISTRICT A

- PERRYVILLE SECTION  
275-60 Perryville Area  
HUMPBACK BAY SECTION  
275-50 Humpback Bay  
IVANOF BAY SECTION  
275-40 Ivanof Bay

The annual harvest for each known stock is dependent upon the previous year's post-fishery biomass estimates and an exploitation rate of 0-20% of the available spawning biomass. The desired exploitation rate depends upon an evaluation of each stock's status as to trends in biomass, recruitment, and overall age composition. By regulation, the sac-roë season extends from 15 April through 30 June. In-season management further regulates the fishery by allowing alternating 24 hour fishing periods, between 24 hour closures. Each fishing period will begin at 1200 hours (12:00 noon) on odd numbered days throughout the regulatory season and close at 1200 hours (12:00 noon) on even numbered days or when the desired harvest level is achieved for each geographic area (stock). Pre-season harvest expectations for each stock may differ from the actual harvest levels if in-season fishery and stock performance indicate major changes in the health of any given stock, i.e. either a significant unexpected lack or abundance of spawning biomass.

The fishery is monitored by means of frequent contact with fishermen and frequent aerial observations of the fishery and the available herring stocks, as well as daily contact with processors and ADF&G field crews which are strategically placed to monitor this freely roaming fishery. An integral element in successfully managing this type of fishery, i.e. a low yield and long duration fishery by highly efficient gear, is the information collected from fishermen and commercial spotters. This cooperation is definitely encouraged and will be treated confidentially in-season as it has in the past.

1987  
CHIGNIK AREA  
ROE HERRING MANAGEMENT PLAN

I. Registration Requirements:

- a. Tenders and Processors: Each tender operator and buyer must register in person and obtain their registration packet containing statistical charts etc. in Kodiak or Chignik, prior to fishing (see regulation 5 AAC 27.540).
- b. Fishing Vessels: There is no area registration requirement for fishing vessels in 1987.

II. Regulations In Effect:

Refer to the 1987 Commercial Herring Regulation Booklet. There have been no regulation changes since 1983 for the Chignik area sac roe herring fishery.

III. Guideline Harvest Level:

The Statewide policy of harvest on a 0-20% exploitation rate of the available spawning biomass will be followed.

Harvest levels will be determined in season on a bay by bay (stock by stock) basis. The Commercial Herring harvest from the Chignik area has been declining since 1980. The harvest range for the past six seasons has been 11-694 tons with an average of 218 tons.

The actual 1987 harvest will depend upon the biological condition of the stock, the amount of effort actively exploring throughout the area, and by the availability of local processing. However, it is not expected that the 1987 harvest will reach the seven year average harvest of 218 tons.

IV. Fishing Season:

- a. Herring may be taken from 15 April through 30 June.
- b. Herring may be taken only during periods established by emergency order.

V. Fishing Periods:

Initially fishing periods will be 24 hours long beginning at 1200 hours (12:00 noon) on all odd numbered days and ending at 1200 hours (12:00 noon) on all even numbered days. The first 24 hour fishing period will begin at 1200 hours (12:00 noon) 15 April. Changes in fishing period duration will be announced by emergency order.

VI. Airplanes:

There is no restriction on the use of airplanes in the roe herring fishery.

VII. Legal Herring Gear:

- a. 5 AAC 27.565. (a) Herring may be taken only by purse seines.
- b. 5 AAC 27.575. SEINE SPECIFICATIONS AND OPERATIONS.  
No purse seine may be more than 1,000 meshes in depth or more than 100 fathoms in length.

VIII. Tender and Processors Reporting Requirements:

- a. All processors and tender operators will be required to report daily catch information to ADF&G. This can be accomplished either by radio (SSB) or telephone. The Chignik ADF&G office will stand by on 4125 SSB and VHF frequencies, between 0800 hours - 1000 hours (8:00 A.M.-10:00 A.M.) and 2000 hours to 2200 hours (8:00 P.M. -

is KBG 76 "Chignik Weir", telephone number 845-2243. If unable to contact ADF&G Chignik, your catch information should be given to ADF&G Kodiak or Sand Point, via telephone or 4125 SSB. The call signs for Kodiak and Sand Point are WHM29 and WIM77 respectively. Failure to report is a violation of commercial fishing regulations (5 AAC 27.590 (2)); vigorous enforcement of this regulation should be expected as a result of past harvest reporting deficiencies.

- b. Because of the relatively small guideline harvest levels for some bays and districts, the fishing season will be promptly closed by emergency order whenever it appears that accurate catch information cannot quickly be obtained from the processors and tenders by radio or telephone. Prompt reporting will increase the likelihood of re-opening certain areas if the summarized catches indicate that the desired guideline harvest levels have not been reached in a certain bay or district and if there are sufficient numbers of herring present in the bay to warrant a reopening.

For Confidential Purposes:

Individual code sheets will be given to each tender/processor for the purpose of reporting catch (tons) and statistical area where herring were caught.

IX. 1987 Management Strategy:

The 1987 Chignik herring management plan will incorporate some of the data collected during the 1980 - 1986 seasons. Guideline harvest levels are established only for those bays where historical biomass estimates and catch data exist. Statistical areas, individual bays or districts may close on short notice or may be restricted to only a few hours fishing time as biomass estimates and fishing effort dictate.

The Big River section has not received any appreciable recruitment of herring into that fishery since 1980 when it was first harvested.

The trend in this stock's age composition has regressed from a healthy 1980 biomass dominated by 4 and 5 year olds to a diminished biomass in 1986 dominated by 8 and 9 year old fish<sup>1</sup>. No significant recruitment has occurred during this seven year period. Consequently the Big River section (272-70 Amber Bay and 272-60 Aniakchak Bay) will remain closed in 1987 until a biomass of multi-age herring are present in sufficient quantity and of healthy age composition to warrant exploitation.

Lake Bay 271-10 in the Chignik Bay District and Castle Bay 273-94 in the Castle Cape Section of the Western District will be very closely monitored in 1987 due to drastic reductions in harvests for each of the last four years. Possible reduced harvest levels may result in these areas as better information is collected.

X. Fisheries Monitoring:

Monitoring and biological sampling will be conducted by two man crews based in various bays: Aniakchak, Amber and Castle bays have been the most productive bays for sac roe and hence of primary concern. Aircraft will be utilized to supply the crews and conduct in-season aerial surveys throughout the fishery. Close contact between fishermen and monitoring crews will be necessary in order to keep all those concerned informed. Commercial spotter reports on effort and biomass estimates will be used to supplement ADF&G observations and will be welcomed; all such reports will be treated confidentially.

---

<sup>1</sup>Sample size in 1986 was very small (n=88) due to the lack of herring.

# 1987 GUIDELINE HARVEST LEVELS CHIGNIK MANAGEMENT AREA<sup>1</sup>

Stat. Area	Guideline Management Unit	Harvest Levels	Required Spawning Biomass	
			@ 20%	@ 10%
272-20 272-60	Amber Bay (Aniakchak Bay)	0 Tons <sup>2</sup>	0 Tons	0 Tons
271-10	Anchorage Bay	100 Tons	500 Tons	1000 Tons
273-94	Castle Bay <sup>3</sup>	10 Tons	50 Tons	100 Tons
271-10	Chignik Lagoon	10 Tons	50 Tons	100 Tons
272-30	Hook Bay	10 Tons	50 Tons	100 Tons
275-50	Humpback Bay	20 Tons	100 Tons	200 Tons
275-40	Ivanoff Bay	10 Tons	50 Tons	100 Tons
272-50	Kujulik Bay	10 Tons	50 Tons	100 Tons
271-10	Lake Bay <sup>3</sup>	10 Tons	50 Tons	100 Tons
272-92 272-96	Port Wrangell (Agripina)	20 Tons	100 Tons	200 Tons
Total		200 Tons	1000 Tons	2000 Tons

<sup>1</sup>The specific statistical areas listed below are those areas having a historical sac roe harvest. The remainder of the Chignik management area is open for exploration and will be regulated within the statewide herring harvest policy of 0% to 20% of the available spawning biomass.

<sup>2</sup>The Big River section (272-70 Amber Bay and 272-60 Aniakchak Bay) will remain closed in 1987 until a biomass of multi-age herring are present in sufficient quantity and of healthy age composition to warrant exploitation.

<sup>3</sup>Possibility of reduced harvest levels exist in this area.



APPENDIX E  
1987 SOCKEYE FORECAST

FORECAST AREA: Chignik  
SPECIES Sockeye Salmon

PRELIMINARY 1987 SEASON SUMMARY

Total Escapement:  $764,837^1 + 38,906^2 = 803,743$   
Chignik Harvest: 1,898,838  
Igvak Harvest (Chignik Bound Sockeye): 343,402  
Stepovak Harvest (Chignik Bound Sockeye): 188,306  
  
Total Return: 3,234,289

---

<sup>1</sup>Weir Counts

<sup>2</sup>Estimated escapement after weir is removed.

PRELIMINARY FORECAST OF THE 1988 RETURN

<u>Early Run (Black Lake Stock)</u>	<u>Point</u>	<u>80% Prediction Range</u>
Return Estimate:	1.43 million	1.27 to 1.59 million
Escapement Goal:	400,000	
Harvest Estimate:	1.03 million	.87 to 1.19 million

<u>Late Run (Chignik Lake Stock)</u>	<u>Point</u>	<u>80% Prediction Range</u>
Return Estimate:	792,000	0.70 to 0.90 million
Escapement Goal:	250,000	
Harvest Estimate:	542,700	0.45 to 0.65 million

<u>Total Chignik</u>	<u>Point</u>	<u>80% Prediction Range</u>
Return Estimate:	2.22 million	1.97 to 2.49 million
Escapement Goal:	650,000	
Harvest Estimate:	1.57 million	1.32 to 1.84 million

FORECAST METHODS:

The Point estimates given above are sums of the predicted 3-ocean and 2-ocean age sockeye in the respective runs.

A multiple linear regression equation predicts the return of 1.3 and 2.3 age fish in the early run from data on the total return of 1.2 age fish in the previous year, mean length of 1.2 age males the previous year, and size of the early run escapement 5 years prior. The late run forecast was derived using the average return per spawner based on the past 27 years of late run returns.

## DISCUSSION OF THE 1988 FORECAST

### EARLY RUN:

The mid point estimate of 1.43 million sockeye for the early run is approximately equal to the average early run return for the past 12 years (Table 1). It is however, 450,000 lower than the average early run return for the past 7 years. One area of concern with this forecast is the classification accuracy of the computer program that allocates the catch and escapement to the respective stocks. The classification accuracy of the 1987 model is at the lower end of the range of acceptable accuracy. This is due to the similarity of the scales of the two stocks during 1987. Further analysis is ongoing to reduce these possible sources of error.

### Late Run:

The 1988 preliminary forecast was developed by using the average return per spawner based on the last 27 years of observed returns. The 1988 forecast of 792,000 is below the average (1.2 million) of the observed returns for the period 1977-1987, but it is anticipated that the 1988 return should fall within the prediction range of 700,000 - 900,000 sockeye.

Prepared by:

Peter Probasco  
Area Management Biologist  
Chignik Area ADF&G

Jeff Fox  
Fisheries Biologist  
Chignik Area ADF&G

Greg Ruggerone  
Fisheries Research Institute  
University of Washington - Seattle

Table 1.

CHIGNIK SOCKEYE SALMON RETURNS  
1954-1987

Early Run				Late Run			
DATE	Catch	Escapement	Total	Catch	Escapement	Total	
1954	52,000	170,000	222,000	11,258	281,675	292,973	
1955	166,000	248,000	414,000	182,646	199,576	381,222	
1956	186,000	266,000	452,000	482,522	491,099	973,621	
1957	155,000	172,000	327,000	147,079	336,545	483,624	
1958	139,000	108,000	247,000	186,322	213,127	399,449	
1959	162,000	94,000	256,000	229,295	288,607	517,902	
1960	274,048	251,567	525,615	418,257	357,223	775,586	
1961	53,853	140,715	194,568	278,609	254,971	533,580	
1962	71,562	167,603	239,165	292,527	324,861	617,388	
1963	80,259	332,535	412,794	323,080	290,312	613,392	
1964	128,950	137,072	266,022	427,940	166,624	594,564	
1965	447,032	307,192	754,224	152,522	163,152	315,674	
1966	76,696	383,546	460,242	143,099	183,526	326,625	
1967	141,000	328,000	469,000	321,000	189,000	510,000	
1968	447,800	342,343	790,143	529,552	244,836	774,418	
1969	207,811	366,589	574,400	186,324	132,055	318,379	
1970	1,594,025	536,257	2,130,282	259,897	109,952	379,849	
1971	531,135	671,668	1,202,803	730,364	132,501	962,865	
1972	41,001	326,320	367,321	375,235	230,270	606,525	
1973	546,523	533,047	1,079,570	375,354	247,144	626,798	
1974	162,024	351,701	513,725	624,568	324,245	948,813	
1975	4,004	308,914	312,918	419,804	266,734	688,538	
1976	516,714	551,254	1,067,968	732,798	270,000	1,003,798	
1977	482,247	419,311	901,558	1,618,111	315,000	1,933,111	
1978	1,067,944	458,660	1,526,604	753,109	273,887	976,996	
1979	191,291	385,694	576,985	872,738	352,122	1,224,860	
1980	154,760	311,332	466,092	705,555	352,729	1,058,384	
1981	718,979	438,540	1,157,519	1,391,914	392,909	1,784,823	
1982	1,251,205	616,117	1,867,322	425,659	221,601	647,260	
1983	856,292	426,177	1,282,469	1,285,085	405,458	1,694,543	
1984	2,621,304	597,712	3,219,016	505,363	258,496	773,859	
1985	663,465	376,578	1,040,043	500,044	369,262	869,306	
1986	1,372,187	566,088	1,938,275	609,081	207,231	816,312	
1987	1,951,794	589,291	2,541,085	481,376	214,452	695,828	
EARLY RUN				LATE RUN			
.....				.....			
22 year average			1,158,425	22 year average			891,904
12 year average			1,465,411	12 year average			1,123,257
7 year average			1,863,676	7 year average			1,040,276

# CHIGNIK AREA 1988 SALMON HARVEST PROJECTIONS

<u>Chinook</u> <sup>1</sup>	<u>Sockeye</u>	<u>Coho</u> <sup>2</sup>	<u>Pink</u> <sup>3</sup>	<u>Chum</u> <sup>4</sup>	<u>Total</u>
2,900	1.57 million	125,000	1.8 million	400,000	3,897,900

---

<sup>1</sup>Recent 10 year average harvest = 3,050  
1988 Harvest will depend primarily on fishing time for sockeye during July.

<sup>2</sup>Majority of the coho harvest occurs in Chignik Lagoon. Total coho catch is directly related to the strength of the late run sockeye return to the Chignik River.

<sup>3</sup>70% of the harvest projection based on returns to Central and Eastern District which has produced poor returns in the past from excellent escapements due to the streams scouring during flooding periods.

<sup>4</sup>Parent year chum escapements were excellent throughout the Chignik Area. Majority of the harvest based on returns to Central and Eastern Districts.

APPENDIX F  
1987 SALMON REGULATIONS

# CHIGNIK AREA

## CHAPTER 15.—CHIGNIK AREA

### ARTICLE 1.—DESCRIPTION OF AREA

5 AAC 15.001. APPLICATION OF THIS CHAPTER. Requirements set forth in this chapter apply to commercial fishing only, unless otherwise specified. Subsistence fishing regulations affecting commercial fishing vessels or affecting any other commercial fishing activity are set forth in the subsistence fishing regulations in chs. 1 and 2 of this title.

5 AAC 15.100. DESCRIPTION OF AREA. The Chignik Area includes all waters of Alaska on the south side of the Alaska Peninsula enclosed by 156° 20' 13" W.long., (the longitude of the southern entrance to Imuya Bay near Kilokak Rocks) and a line extending 135° southeast from Kupreanof Point.

### ARTICLE 2.—FISHING DISTRICTS

5 AAC 15.200. FISHING DISTRICTS. (a) The Eastern District includes all waters from the southernmost marker 500 yards from the mouth of Aniakchak Lagoon to the eastern boundary of the Chignik area

(1) Agripina Section: all waters between Kilokak Rocks at 57°11'22" N.lat., 156°20'13" W.long., and Cape Providence at 56°58'40" N.lat., 156°33'28" W.long.;

(2) Chiginagak Section: all waters between Cape Providence at 56°58'40" N.lat., 156°33'28" W.long., and Cape Kuyuyukak at 56°53'54" N.lat., 156°49'43" W.long.;

(3) Nakalilok-Yantarni Section: all waters between Cape Kuyuyukak at 56°53'54" N.lat., 156°49'43" W.long., and Cape Kunmik at 56°45'53" N.lat., 157°11'53" W.long.;

(4) Big River Section: all waters of Amber and Aniakchak Bays bounded by 157°11'53" W.long., and the latitude of the southernmost marker 500 yards from the mouth of Aniakchak Lagoon;

(b) The Chignik Bay District includes all waters of Chignik Bay and Lagoon west of a line from Jack Point at 56°17'32" N.lat., 158°11'56" W.long., to Neketa Creek at 56°24'10" N.lat., 158°27'37" W.long.

(c) The Western District includes all waters south and west of Jack point at 56°17'32" N.lat., 158°11'56" W.long., excluding the waters of Chignik Lagoon to Coal Cape at 55°53'28" N.lat., 159°00'20" W.long.

(1) Castle Cape Section: all waters between Jack Point at 56°17'32" N.lat., 158°11'56" W.long. and Cape Ikli at 55°58'45" N.lat., 158°30' W.long.;

(2) Dorner Bay Section: all waters between Cape Ikli at 55°58'45" N.lat., 158°30' W.long., and a point on the west side of Dorner (Kuiukta) Bay's entrance at 55°57' N.lat., 158°40' W.long.;

## CHIGNIK AREA

(3) Mitrofanina Section: all waters, including Mitrofanina Island between a point on the west side of Dorner (Kuiukta) Bay's entrance at 55°57' N.lat., 158°40' W.long., and Stirni Point at 55°54'50" N.lat., 158°55' W.long.;

(4) Anchor Bay Section: all waters between Stirni Point at 55°54'50" N.lat., 158°55' W.long., and Coal Cape at 55°53'28" N.lat., 159°00'20" W.long.

(d) The Perryville District includes all waters between Coal Cape at 55°53'28" N.lat., 159°00'20" W.long. and Kupreanof Point at 55°33'55" N.lat., 159°35'50" W.long.

(1) Perryville Section: all waters including Chiachi Islands, between Coal Cape at 55°53'28" N.lat., 159°00'20" W.long., and Coal Point at 55°51'31" N.lat., 159°18'50" W.long.;

(2) Humpback Bay Section: all waters including Paul and Jacob islands, between Coal Point at 55°51'34" N.lat., 159°18'50" W.long., and Alexander Point at 55°47'22" N.lat., 159°24'34" W.long.;

(3) Ivanof Bay Section: all waters between Alexander Point at 55°47'22" N.lat., 159°24'34" W.long., and Kupreanof Point at 55°33'55" N.lat., 159°35'50" W.long.

(e) The Central District includes all waters, excluding the waters of the Chignik Bay district between Jack Point (56°17'32" N.lat., 158°11'56" W.long.), and the southernmost marker 500 yards from the mouth of Aniakchak Lagoon.

(1) Cape Kumlik Section: all waters, including Sutwik Island, between the latitude of the southernmost marker 500 yards from the mouth of Aniakchak Lagoon and 157°40'25" W.long., on the southwest side of Cape Kumlik;

(2) Kujulik Section: all waters between a point on the southwest side of Cape Kumlik at 56°36'32" N.lat., 157°40'25" W.long., and a point on Cape Kumliun at 56°28'34" N.lat., 157°51'26" W.long.;

(3) Outer Chignik Bay Section: all waters including Nakchamik Island between a point on Cape Kumliun at 56°28'34" N.lat., 157°51'26" W.long., and Jack Point at 56°17'32" N.lat., 158°11'56" W.long., excluding the Chignik Bay district.

## ARTICLE 3.—SALMON FISHERY

5 AAC 15.310. FISHING SEASONS. (a) In the Chignik Bay District, salmon may be taken only from June 1 through October 31.

(b) The Perryville, Western, Central and Eastern Districts are opened by emergency order.

5 AAC 15.320. WEEKLY FISHING PERIODS. (a) Salmon fishing periods shall be established by emergency order.

5 AAC 15.330. GEAR. (a) Salmon may be taken only by purse seine or hand purse seine.



## CHIGNIK AREA

**5 AAC 15.332. SEINE SPECIFICATIONS AND OPERATION.** (a) In the Eastern, Central, Western and Perryville Districts, no purse seine less than 100 fathoms or more than 225 fathoms in length may be used.

(b) In the Eastern, Central, Western and Perryville Districts, hand purse seines may not be less than 100 fathoms or more than 225 fathoms in length.

(c) In the Chignik Bay District, purse seines and hand purse seines may not be less than 100 fathoms or more than 125 fathoms in length.

(d) No seine may be less than three fathoms in depth.

(e) No lead may be more than 75 fathoms in length. The aggregate length of seine and lead may not be more than 225 fathoms in the Eastern, Central, Western and Perryville Districts.

(f) When a purse seine or hand purse seine is in the water for the purpose of taking fish, the seine shall be attached to the licensed vessel operating the gear.

**5 AAC 15.350. CLOSED WATERS.** Salmon may not be taken in the following waters:

(1) Chignik Lagoon

(A) southwest of a line from the tip of Hume Point to the north side of Chignik Island (56° 17' 25" N.lat., 158° 35' 30" W.long.);

(B) Mallard Duck Bay: southwest of a line from the tip of Green Point to Chignik Island (56° 16' 38" N.lat., 158° 34' 54" W.long.);

(2) Kilokak Rocks Bay: northwest of a line from the southern entrance of the bay at 57° 09' 50" N.lat., 156° 20' 40" W.long., then to the opposite shore 500 yards northeast of the mouth of Kilokak Rocks Creek at 57° 10' 07" N.lat., 156° 20' 40" W.long.;

(3) Agripina River: west of a line from 57° 06' 46" N.lat., 156° 28' W.long., to 57° 06' 35" N.lat., 156° 28' 30" W.long.;

(4) Chiginagak Bay: north of a line from 57° 00' 33" N.lat., 156° 45' 38" W.long., to 57° 01' 48" N.lat., 156° 41' 51" W.long.;

(5) Nakalilok Lagoon: the lagoon and within 500 yards of the entrance;

(6) Yantarni Lagoon: the lagoon and within 500 yards of the entrance;

(7) Aniakchak River: northwest of a line from approximately 500 yards northeast of the mouth at 56° 45' 43" N.lat., 157° 28' 46" W.long., to a marker on the southern tip of the island directly off the mouth and then to approximately 1,000 yards southwest of the mouth at 56° 45' 20" N.lat., 157° 31' W.long.;

(8) Aniakchak Lagoon: the lagoon and within 500 yards of the entrance;

## CHIGNIK AREA

(9) Kujulik Bay: the southwest end of the bay northwest of a line from Taps Point (56° 35' 52" N.lat., 157° 59' W.long.) to Long Point, 56° 34' 20" N.lat., 158° 03' 20" W.long., then to a point on the opposite shore at 56° 32' 28" N.lat., 158° 04' 05" W.long.;

(10) Portage Bay: west of a line from 56° 11' 12" N.lat., 158° 35' 40" W.long., to 56° 11' 40" N.lat., 158° 35' 18" W.long.

(11) Ivanof Bay: north of a line from the marker on the northwest shore 1,000 yards from the stream mouth to the marker on the southeast shore 750 yards from the stream mouth;

(12) Humpback Bay: within 1,000 yards of the terminus of Humpback Bay stream (275-502) at 55° 52' 30" N.lat., 159° 20' W.long.;

(13) Ivanof Bay: west of a line from 55° 53' 15" N.lat., 159° 32' W.long., on the northwest shore to the northeast tip of a sand island at 55° 52' 30" N.lat., 159° 31' W.long., to the headland at 55° 51' N.lat., 159° 31' W.long., and northeast of a line from the cannery at 55° 54' 15" N.lat., 159° 29' 25" W.long., to a point on the opposite shore at 55° 52' 30" N.lat., 159° 28' W.long.;

(14) Alfred Creek (271-104): before August 1, the 500 yard closure at the terminus does not apply; the 500 yard closure does apply from August 1 to the end of the salmon fishing season;

(15) Dago Frank Creek (271-105): before August 1, the 500 yard closure at the terminus does not apply; the 500 yard closure does apply from August 1 to the end of the salmon fishing season;

(16) Hook Bay: northwest of a line from the tip of Hook Bay spit at 56° 30' 07" N.lat., 158° 08' 04" W.long., to a point on the north side of the bay at 56° 31' 07" N.lat., 158° 07' 32" W.long.

(17) Unnamed stream at 55° 49' 02" N.lat., 159° 24' 15" W.long.; the 500 yard closure at the terminus does not apply.

**5 AAC 15.360. EASTERN DISTRICT SALMON MANAGEMENT PLAN.** (a) The department shall open and close the Eastern District for commercial salmon fishing concurrently with the Chignik Bay and Central Districts. The department may close the Eastern District for the period between the first (Black Lake) and second (Chignik Lake) sockeye salmon runs.

(b) The department shall close the Eastern District on July 15 to allow evaluation of the strength of the pink and chum salmon runs.

(c) The department shall close the Eastern district when it determines that the salmon being harvested in that district are from stocks that do not originate from spawning areas located in the Chignik Area.

APPENDIX G

1987 SALMON EMERGENCY ORDER ABSTRACT

EMERGENCY ORDER NO. 4-F-L-05-87

ISSUED AT CHIGNIK: June 10, 1987

EXPLANATION: The Chignik Bay, Central, and Eastern Districts of the Chignik Management Area will open to commercial salmon fishing at 4:00 P.M. Thursday, June 11 and will remain open until 4:00 P.M. Friday, June 12.

Markers for Chignik Lagoon will be the Hume Point markers. Lake Bay and Mud Bay are closed to commercial salmon fishing. All other closed water areas are described in the 1987 Commercial Finfish Regulation booklet.

Fishermen are encouraged to stand by prior to the opening for a possible marker change in Chignik Lagoon. This marker change will be dependent on escapement counts through the weir on June 10 and 11.

JUSTIFICATION: It is projected that the minimum escapement goal of 40,000 sockeye salmon entering Chignik River by June 12 will be achieved prior to 4:00 P.M. Thursday, June 11 (June 10, 1987 accumulative escapement = 36,041). The test fishing conducted on June 6 indicated a good buildup of fish within Chignik Lagoon proper and a strong influx of fish moving into the Lagoon on a daily basis. With the achievement of the escapement goals for the early run, the results of the test fishery and the forecasted return for the early run of 1.8 million, a 24 hour commercial salmon fishery at this time is justified.

-----

EMERGENCY ORDER NO. 4-F-L-06-87

ISSUED AT CHIGNIK: June 10, 1987

EXPLANATION: Due to the high daily escapement through the weir as of 8:00 P.M. June 10, 1987 (38,340) which places the total accumulative escapement well into the June escapement schedule for the early (Black Lake) run. Therefore, the commercial fishery for the Chignik Bay, Central and Eastern Districts will be extended until further notice.

Commercial fishing regulatory markers will be moved from Hume Point to the Mensis Point markers. This marker change will go into effect 4:00 P.M. Thursday June 11, 1987.

Fishermen are reminded that the commercial opening at 4:00 P.M. June 11, 1987 will be started by flare gun.

JUSTIFICATION:

The early run (Black Lake) sockeye escapement goals are as follows:

EARLY RUN - 400,000 Minimum

June 12	40,000
14	50 - 65,000
16	75 - 100,000
18	125 - 150,000
20	175 - 200,000
22	225 - 250,000
25 - 193	275 - 325,000
30	350 - 400,000

The total accumulative escapement through June 10 is 77,355 with a daily escapement for June 10 of 41,314. It is anticipated that the escapement for June 11 will also be high. The current total escapement is well into the escapement schedule allowing a sufficient buffer to justify an extension of the commercial fishery until further notice. The marker change from the Hume Point markers to the Mensis Point markers will provide the optimum opportunity to harvest the current surplus of sockeye salmon.

-----

EMERGENCY ORDER NO. 4-F-L-07-87

ISSUED AT CHIGNIK: June 17, 1987

EXPLANATION: The Chignik Bay, Central and Eastern Districts of the Chignik Management Area will close to commercial salmon fishing at 6:00 P.M. Thursday June 18, 1987 and will remain closed until further notice.

Fishermen are hereby put on notice that this closure may be short in duration and that there will be no 24 hour notice prior to the next opening. All efforts will be made to give a 24 hour notice, however with the current rate of movement of fish into Chignik Lagoon and the uncertainty of how long the fish will hold in the Lagoon, time may not allow for a 24 hour notice.

JUSTIFICATION: The cumulative escapement to date, June 17, is estimated at 167,618. The escapement goal for June 20 is 175,000 - 200,000. At the current daily rate of escapement through the weir, it is projected that the cumulative escapement by June 20 will be short of the 200,000 goal. In order to bring the escapement within the escapement schedule (goals) it is necessary to close the commercial fishery now in progress in order to allow for an increase in the daily escapement rate.

Taking into consideration the daily commercial catches, averaging 73,000 per day, it is projected that this closure will be short in duration.

-----

EMERGENCY ORDER NO. 4-F-L-08-87

ISSUED AT CHIGNIK: June 20, 1987

EXPLANATION: The Chignik Bay, Central and Eastern Districts of the Chignik Management Area will open to commercial salmon fishing at 8:00 P.M. Saturday June 20, 1987 and will remain open until 6:00 P.M. Tuesday June 23.

Commercial fishing regulatory markers for Chignik Lagoon will be the Hume Point markers. If daily escapement increases beyond the desired escapement goals then there may be a marker move in Chignik Lagoon during the fishery.

Fishermen are reminded that Lake Bay and Mud Bay are closed to commercial salmon fishing and that all other closed water areas are as described in the 1987 commercial finfish regulation booklet.

JUSTIFICATION:

The escapement goal for June 20 is 175,000-200,000 sockeye for the early (Black Lake) run. The cumulative escapement through June 19 is 177,576. The daily escapement at 10:00 A.M. June 20 is 13,530.

Due to the cumulative escapement to date being well within the escapement schedule and the projected escapements for June 20 and 21 are expected to give the buffer needed to allow a commercial fishery and still stay abreast of the escapement schedule, a commercial fishery at this time is justified to harvest surplus sockeye. This fishery will last approximately three days, at which time it will close until the cumulative escapement is sufficient to assure the 350,000-400,000 goal for the month of June for the early run.

---

EMERGENCY ORDER NO. 4-F-L-09-87

ISSUED AT CHIGNIK: June 26, 1987

EXPLANATION: The Chignik Bay, Central and Eastern Districts of the Chignik Management Area will open to commercial salmon fishing at 6:00 P.M. Saturday June 27, 1987 and will remain open until further notice.

Commercial fishing regulatory markers for Chignik Lagoon will be the Hume Point markers. Fishermen are reminded that there may be a marker move in Chignik Lagoon during the commercial fishery. There will be no 24 hour notice for this marker move.

Lake Bay and Mud Bay are closed to commercial salmon fishing and that all other closed water areas are as described in the 1987 commercial finfish regulation book.

JUSTIFICATION: The cumulative escapement through June 25 is 305,735. By 12:00 Noon June 26 the daily escapement had exceeded 42,000. This high daily escapement for June 26 and a projected escapement of at least 30,000 for June 27 will place the total escapement to date within the escapement goal of 350,000-400,000 for June. Therefore a commercial fishery is justifiable at this time in order to allow for the optimum opportunity to harvest sockeye surplus to escapement needs.

---

EMERGENCY ORDER NO. 4-F-L-10-87

ISSUED AT CHIGNIK: June 27, 1987

EXPLANATION: Due to the high daily escapement of 55,401 sockeye through the weir on June 26, the large volume of fish behind the weir at 4:30 A.M. June 27, and the large build-up of fish between Hume Point and Mensis Point, it is necessary at this time to move the markers to Mensis Point. The marker move will be done at 12:00 Noon during low tide in order to provide for an orderly commercial fishery that will minimize gear conflicts.

JUSTIFICATION: Due to the high daily escapement of 55,401 sockeye through the weir on June 26, the large volume of fish behind the weir at 4:30 A.M. June 27, and the large build-up of fish between Hume Point and Mensis Point, it is necessary at this time to move the markers to Mensis Point. The marker move will be done at 12:00 Noon during low tide in order to minimize gear conflicts and provide for an orderly commercial fishery when closed waters are reduced.

---

EMERGENCY ORDER NO. 4-F-L-11-87

ISSUED AT CHIGNIK: July 3, 1987

EXPLANATION: In order to allow protection of the second run of sockeye salmon destined for the Chignik River System, the Eastern District of the Chignik Management Area will close to commercial salmon fishing at 12:01 A.M. July 5 and will remain closed until further notice.

JUSTIFICATION:

Evaluation of the strength of the Chignik Lake sockeye run (second run) cannot be determined at this time. Taking into consideration the average timing of the second run and the migration time from the Eastern District to Chignik Lagoon it is necessary to close this area in order to allow protection of the second run until the run can be evaluated.

---

EMERGENCY ORDER NO. 4-F-L-12-87

ISSUED AT CHIGNIK: July 6, 1987

EXPLANATION: The entire Chignik Management Area will close to commercial salmon fishing at 12:00 Noon Tuesday July 7, 1987. It is anticipated that this closure will be short in duration and Chignik fishermen are reminded that there will be no 24 hour notice prior to the next opening. The next opening will be dependent on the estimated escapement for the second run and the size of buildup within the lagoon. When the next opening is announced the entire Chignik Management Area will open to commercial salmon fishing.

JUSTIFICATION:

The estimated escapement to date for the Chignik Lake sockeye (second run) is 24,000. The desired escapement for this run is 40,000 by July 10. In order to stay within the escapement goals for the month of July and achieve the minimum escapement of 200,000 a closure at this time is necessary.

---

EMERGENCY ORDER NO. 4-F-L-13-87

ISSUED AT CHIGNIK: July 9, 1987

EXPLANATION: The entire Chignik Management Area will open to commercial salmon fishing at 2:00 P.M. Friday July 10, 1987 and will remain open until 2:00 P.M. Saturday July 11, 1987. Markers for Chignik Lagoon will start at Humes Point. If escapement counts continue to increase there may be a marker move prior to the opening and a possible extension of the commercial fishery.

JUSTIFICATION: The cumulative escapement for the second run through July 8 is estimated at 28,491. The escapement goal for July 10 is 40,000. The daily escapement at 11:00 A.M. July 9 is estimated at 15,294 with an hourly escapement averaging 3,824. It is projected based on the number of fish behind the weir and the number of fish between Humes Point and Mensis Point that the total second run escapement by the opening time will exceed the desired escapement for that date as well as provide a sufficient cushion to allow for a commercial fishery at this time.

---

EMERGENCY ORDER NO. 4-F-L-14-87

ISSUED AT CHIGNIK: July 10, 1987

EXPLANATION: The entire Chignik Management Area will be extended until further notice.

Markers for Chignik Lagoon will be moved from the Hume Point markers to the Mensis Point markers at 2:00 P.M. Friday July 10, 1987.

Fishermen are reminded that Lake Bay and Mud Bay are closed to commercial salmon fishing and that all other closed water areas will be as described in the 1987 Commercial Finfish Regulation booklet.

JUSTIFICATION: The cumulative escapement for the second run through July 9 is estimated at 53,263. The daily escapement at 11:00 A.M. July 10 is estimated at 19,278 with an hourly escapement averaging 4,820. It is projected based on the number of fish behind the weir and the number of fish from Mensis Point to the weir that the total second run escapement through July 10 will exceed 75,000.

Therefore it is necessary at this time to extend the commercial fishery until further notice in order to allow for the optimum opportunity to harvest the current surplus of sockeye to escapement purposes.

-----

EMERGENCY ORDER NO. 4-F-L-15-87

ISSUED AT CHIGNIK: July 15, 1987

EXPLANATION: Due to the declining commercial catches within and outside of Chignik Lagoon and the daily escapement rate of less than 1,200 sockeye per day, it is necessary at this time to close the entire Chignik Management Area. The area will close at 12:01 A.M. Thursday, July 16 and will remain closed until further notice.

JUSTIFICATION:

Second run escapement goals for the month of July:

July 6	-	
8	-	
10		40,000
12	50 -	60,000
14	65 -	75,000
16	80 -	90,000
19	100 -	115,000
21	125 -	135,000
23	145 -	160,000
26	170 -	180,000
29	185 -	195,000
31	195 -	200,000

The cumulative escapement for the second run through July is estimated at 95,859. The estimated catch for Chignik Lagoon on July 14 is 21,000 with an estimated catch of only 7,000 for the outside areas. Indications (i.e. Commercial Fisheries) of fish movements in areas outside of the Chignik area indicate fish moving this way.



Currently this is not substantiated by the commercial catches within the Chignik area.

In order to prevent the risk of not meeting the July escapement goal, the low cumulative escapement to date and the declining commercial catches it is necessary at this time to close the commercial fishery. This closure will allow more time to further evaluate the strength of the second run.

---

EMERGENCY ORDER NO. 4-F-L-16-87

ISSUED AT CHIGNIK: July 25, 1987

EXPLANATION: The entire Chignik Management Area will open to commercial salmon fishing at 6:00 A.M. Sunday July 26 and will remain open until 12:01 A.M. Wednesday July 29.

For the Western and Perryville Districts all waters northwest of a line from Alexander Point to Cape Itki will be closed to commercial salmon fishing. This area includes all waters in Dorner Bay, Ivan Bay, Mitrofanina Bay and Humpback Bay.

For Ivanof Bay all waters northwest of Road Island will be closed to commercial salmon fishing.

Markers for Chignik Lagoon will be the Hume Point markers.

JUSTIFICATION: Aerial surveys conducted on Saturday, July 15, 1987 of the Western and Perryville districts indicate a very poor showing of fish within bays and lagoons. In order to provide a large sanctuary for the spawning pink and chum salmon stocks for this area a closure is necessary. The areas that remain open will provide the opportunity for the cape fleet to harvest sockeye salmon migrating to the Chignik River system.

The escapement goal for the second run of sockeye bound for the Chignik River system is 200,000 for the month of July. The cumulative escapement for July 25 is estimated at 177,018 with an average escapement for the prior five days of 19,000 fish per day. Based on the buildup within Chignik Lagoon, the daily escapement rate and the cumulative escapement it is projected that the escapement goal will be achieved and it is necessary at this time to open the commercial fishery in order to harvest the surplus to escapement needs.

---

EMERGENCY ORDER NO. 4-F-L-17-87

ISSUED AT CHIGNIK: August 1, 1987

EXPLANATION: The Western and Perryville Districts of the Chignik Management area will open to commercial salmon fishing at 12:00 Noon Sunday August 2, 1987 and will remain open until 10:00 P.M. Tuesday August 4, 1987.

Closed waters for this area will be as follows: All waters northwest of a line from Alexander Point to Cape Itki will be closed to commercial salmon fishing. This area includes all waters in Dorner Bay, Ivan Bay, Mitrofanina Bay and Humpback Bay.

In Ivanof Bay all waters northwest of Road Island will be closed to commercial salmon fishing.

Fishermen are hereby reminded and put on notice that any illegal fishing activities documented during this opening will result in the immediate closure of the entire area. This closure would remain in effect until further notice.

JUSTIFICATION: Aerial surveys conducted on July 30 and 31 of the Western and Perryville districts indicated a good showing of fish within bays and streams. Taking into consideration the increasing daily catches of pink and chum salmon during the commercial fishery from July 26 through July 28, and the increase in fish moving into the bays and streams since the last aerial survey (July 25) it is apparent that there may be a large volume of fish moving into the Chignik area. In order to substantiate this and provide the opportunity to harvest the fish when they are in optimum condition it is necessary at this time to allow a commercial test fishery. If this commercial test fishery indicates a small volume of fish moving off the capes we will still have the majority of the month of August to obtain pink and chum salmon escapement goals.

-----

EMERGENCY ORDER NO. 4-F-L-18-87

ISSUED AT CHIGNIK: August 10, 1987

EXPLANATION: The Chignik Bay District, the outer Chignik Bay section of the Central District and the Castle Cape Section of the Western District will open to commercial salmon fishing at 6:00 A.M. Wednesday August 12 and will remain open until 9:00 P.M. Friday, August 14, 1987.

This area includes all waters from Cape Itki in the Western District to Cape Kumliun in the Central District.

Markers for Chignik Lagoon will be the Mensis Point markers. The Dago Frank Creek markers on Ocean Beach will be in effect until the end of the commercial salmon season. Lake Bay and Mud Bay are closed and all other closed water areas will be as described in the 1987 Commercial Finfish Regulation booklet.

JUSTIFICATION: The minimum escapement goal for the second run of sockeye (late run) destined to the Chignik Lake's system is 250,000. The cumulative escapement to date (August 10) for the second run is estimated at 242,955. It is projected by the end of August the escapement goal of 250,000 will be achieved. The waters opened to commercial salmon fishing between Cape Itki and Cape Kumliun will target specifically on sockeye migrating to the Chignik River. The three day fishery will provide the opportunity to harvest the surplus and still provide a sufficient amount of time to allow for continued escapement throughout the duration of the second run.

-----

EMERGENCY ORDER NO. 4-F-L-19-87

ISSUED AT CHIGNIK: August 15, 1987

EXPLANATION:

The Chignik Bay District, the Castle Cape Section of the Western District and the Outer Chignik Bay Section of the Central District will open to commercial salmon fishing at 12:00 Noon Tuesday August 18, 1987 and will remain open until 4:00 P.M. Friday August 21. This area that will be opened to commercial salmon fishing includes all waters from Cape Itki to Cape Kumliun.

Fishermen are reminded that Lake Bay and Mud Bay are closed to commercial salmon fishing, the Dago Frank Creek markers on ocean beach are in effect and all other closed water areas are as described in the 1987 commercial finfish regulations booklet.

Markers for Chignik Lagoon will be the Mensis Point markers.

JUSTIFICATION:

The minimum escapement goal for the second run of sockeye (late run) destined to the Chignik Lake's system has been achieved. The waters opened to commercial salmon fishing between Cape Itki and Cape Kumliun will target specifically on sockeye migrating to the Chignik River. The three day fishery will provide the opportunity to harvest the surplus and still provide sufficient amount of time to allow for continued escapement throughout the duration of the second run.

The remainder of the Chignik Area will remain closed due to the poor showing of pink and chum salmon stocks within these areas.

-----  
EMERGENCY ORDER NO. 4-F-L-20-87

ISSUED AT CHIGNIK: August 17, 1987

EXPLANATION:

The Dorner Bay Section of the Western District will open to commercial salmon fishing for two hours starting at 12:00 Noon Tuesday August 18, 1987 and closing at 2:00 P.M. Tuesday August 18, 1987.

Closed waters for this area will be as described in the 1987 commercial finfish regulation booklet.

The purpose of this opening is to harvest a portion of the buildup of chums at the head of Portage Bay and still allow for some escapement by regulating the amount of time fished.

All efforts will be made, weather permitting to conduct this opening as a flare gun opener.

JUSTIFICATION:

Within the Dorner Bay Section (Portage Bay) there is a buildup of chum salmon that exceed escapement requirements for this area. Therefore, in order to allow for the opportunity to harvest these chums and still provide for the escapement goals a two hour commercial fishery will be permitted.

-----

EMERGENCY ORDER NO. 4-F-L-21-87

ISSUED AT CHIGNIK: August 18, 1987

EXPLANATION:

Commercial fishing will be allowed up to the stream terminus for the creeks located in Seal Bay of the Dorner Bay Section of the Western District. Closed waters for Portage Bay will remain as described in the 1987 commercial finfish regulation booklet. This marker move will take effect at the opener on 12:00 Noon Tuesday, August 18, 1987 and will remain in effect until 2:00 P.M. Tuesday August 18, 1987.

JUSTIFICATION:

Escapement goals for these two streams, ADF&G stream numbers 273-843 and 273-844 have been achieved and a very large volume of chums have moved into the flats located between the two streams. These chums are excess to escapement needs and should be harvested.

-----

EMERGENCY ORDER NO. 4-F-L-22-87

ISSUED AT CHIGNIK: August 22, 1987

EXPLANATION:

The Western, Perryville, Chignik Bay and the Central Districts of the Chignik Management Area will open to commercial salmon fishing at 12:01 A.M. Tuesday August 25, 1987 and will remain open until 12:01 A.M. Saturday, August 29, 1987.

Closed waters for this area will be as follows:

CHIGNIK LAGOON: Mensis Point Markers

WESTERN AND PERRYVILLE DISTRICTS: All waters northwest of a line from Cape Itki to Alexander Point with the exception of Dorner Bay. Markers for Dorner Bay will be as follows:

PORTAGE BAY: Markers Posted - West of a line from 56°11'32" N. lat., 158°33'15" W. long, to 56°10'38" N. lat., 158°32'57" W. long.

All other streams within Dorner Bay will have 500 yard closures from the stream terminus to the bay.

IVANOF BAY: west of a line from 55°53'15" W. long., on the northwest shore to the northeast tip of a sand island at 55°52'30" N. lat., 159°31' W. long., to the headland at 55°51' N. lat., 159°31' W. long., and northeast of a line from the cannery at 55°54'25" N. lat., 159°29'25" W. long., to a point on the opposite shore at 55°52'30" N. lat., 159°28' W. long.

All other closed water areas will be as described in the 1987 commercial finfish regulation booklet.

The Eastern District will remain closed due to the low water conditions of the area streams. Fish are currently building up within bay areas and are reluctant to move into the streams. Aerial surveys conducted on August 21 indicated that the fish observed would only satisfy minimum escapement requirements for these streams.

#### JUSTIFICATION:

The minimum escapement goal for the second run of sockeye (late run) destined to the Chignik Lake's system has been achieved. Minimum escapement requirements for the majority of the outside areas are within the bay areas. Ivanof and Dorner Bays have fish in the bays in excess to what is needed for escapement purposes.

Therefore in order to allow an optimum opportunity to harvest the surplus and still have a sufficient area closed to protect the escapement this emergency order, No. 4-F-L-22-87 will go into effect 12:01 A.M. Tuesday, August 25, 1987.

-----  
EMERGENCY ORDER NO. 4-F-L-23-87

ISSUED AT CHIGNIK: Sunday, August 30, 1987

#### EXPLANATION:

The Western, Perryville, Chignik Bay and the Central Districts of the Chignik Management Area will open to commercial salmon fishing at 12:01 A.M. Tuesday September 1, 1987 and will remain open until 12:01 A.M. Saturday, September 5, 1987.

Closed waters for this area will be as follows:

CHIGNIK LAGOON: Mensis Point Markers

WESTERN AND PERRYVILLE DISTRICTS: All waters northwest of a line from Cape Itki to Alexander Point with the exception of Dorner Bay. Markers for Dorner Bay will be as follows:

PORTAGE BAY: Markers Posted - West of a line from 56°11'32" N. lat., 158°33'15" W. long., to 56°10'38" N. lat., 158°32'57" W. long.

All other streams within Dorner Bay will have 500 yard closures from the stream terminus to the bay.

IVANOF BAY: west of a line from 55°53'15" W. long., on the northwest shore to the northeast tip of a sand island at 55°52'30" N. lat., 159°31' W. long., to the headland at 55°51' N. lat., 159°31' W. long., and northeast of a line from the cannery at 55°54'25" N. lat., 159°29'25" W. long., to a point on the opposite shore at 55°52'30" N. lat., 159°28' W. long.

All other closed water areas will be as described in the 1987 commercial finfish regulation booklet.

At this time the Eastern District will remain closed until aerial surveys can be conducted of this area's waters. If the water conditions have improved allowing the majority of the pink and chum salmon to move upriver, then the Eastern District will be open to target specifically on coho stocks and late arriving chum and pink salmon.

JUSTIFICATION:

The minimum escapement goal for the second run of sockeye (late run) destined to the Chignik Lake's system has been achieved. Minimum escapement requirements for the majority of the outside areas are within the bays and/or streams. Escapement requirements for Ivanof and Dorner Bays have been achieved and currently there are fish in the bays in excess to what is needed for escapement purposes.

Due to the low water conditions and the stream morphology of the Eastern District this area will remain closed until aerial surveys indicate that the majority of the pink and chum salmon have moved into the area's streams.

In order to allow an optimum opportunity to harvest the surplus and still have a sufficient area closed to protect the escapement this emergency order, No. 4-F-L-23-87 will go into effect 12:01 A.M. Tuesday, September 1, 1987.

---

EMERGENCY ORDER NO. 4-F-L-24-87

ISSUED AT CHIGNIK: August 31, 1987

EXPLANATION:

The Eastern District of the Chignik Management Area will open to commercial salmon fishing at 12:01 A.M. Wednesday, September 1, 1987 and will remain open until 12:01 A.M. Saturday, September 5, 1987.

JUSTIFICATION:

Aerial surveys conducted on Monday August 31 of the Eastern District indicated that the majority of the pink and chum salmon have moved into the area's streams. Therefore, this area will open in order to allow commercial fishing on local coho stocks.

---

EMERGENCY ORDER NO. 4-F-L-25-87

ISSUED AT CHIGNIK: September 6, 1987

EXPLANATION:

This emergency order will go into effect at 12:01 Tuesday, September 8, 1987 and will remain in effect until the end of the commercial salmon season, 11:59 P.M. Saturday October 31, 1987.

-----

For the Chignik Bay District, the outer Chignik Bay Section of the Central District and the Castle Cape Section of the Western District. This area includes all waters from Cape Itki to Cape Kumliun.

This area will open every week at 12:01 A.M. Tuesday and remain open until 12:01 A.M. Saturday. This will go into effect at 12:01 A.M. Tuesday, September 8, 1987.

-----

The remainder of the Chignik Management Area will be open for three days per week starting at 12:01 A.M. Tuesday until 12:01 A.M. Friday. This will go into effect at 12:01 A.M. Tuesday, September 8, 1987.

-----

Closed water areas for the Chignik Management Area will be as described in the 1987 Commercial Finfish regulation booklet with the following exceptions:

CHIGNIK LAGOON: Mensis Point Markers will be in effect. Lake Bay and Mud Bay will remain closed to commercial salmon fishing.

JUSTIFICATION:

The minimum escapement goal for the second run of sockeye (late run) destined to the Chignik Lake's system has been achieved. Minimum escapement requirements for the majority of the outside areas, are within the area specific streams. Water conditions have improved in the Eastern District allowing the pink and chum salmon that were holding to move into the streams.

It is desirable to regulate commercial fisheries so that partial escapements are achieved throughout the run. This will assure that all contributing stocks of red salmon that make up the overall run will receive adequate escapement. Therefore, a commercial fishery will be implemented that will provide for escapement throughout the run as well as providing the opportunity to harvest the surplus of red salmon that are not needed for escapement purposes.

The three day per week fishery in the areas outside of the Chignik Bay District should allow adequate time to harvest returning coho salmon stocks. The four day closure will assure that sufficient numbers of coho will escape into the area streams for spawning purposes.

-----

APPENDIX H  
1987 HERRING REGULATIONS



## ARTICLE 9. STATISTICAL AREA L; CHIGNIK AREA

**5 AAC 27.550. DESCRIPTION OF AREA.** Statistical Area L includes all waters on the south side of the Alaska Peninsula enclosed by 156°20'13" W. long. (the longitude of the southern entrance to Imuya Bay near Kilokak Rocks) and a line extending southeast (135°) from the southernmost tip of Kupreanof Point.

**5 AAC 27.555. DESCRIPTION OF DISTRICTS.** Districts are as described in 5 AAC 15.200.

**5 AAC 27.560. FISHING SEASONS AND WEEKLY FISHING PERIODS.** (a) Herring may be taken from April 15 through June 30 (sac roe season) and from August 15 through February 28 (food and bait season).

(b) Herring may be taken only during periods established by emergency order.

**5 AAC 27.565. GEAR.** (a) Herring may be taken only by purse seines.

(b) A herring fishing vessel may operate or assist in operating only one legal limit of herring fishing gear in the aggregate.

(c) Unhung gear sufficient for mending purposes may be carried aboard fishing vessels.

(d) Herring fishing nets shall be measured, either wet or dry, by determining the maximum length of cork line when the net is fully extended with traction applied at one end only.

(e) The interim-use or entry permit holder is responsible for operation of the net.

(f) The use of leads with any net gear used for commercial herring fishing is prohibited during the herring sac roe season.

**5 AAC 27.575. SEINE SPECIFICATIONS AND OPERATIONS.** No purse seine may be more than 1,000 meshes in depth or more than 100 fathoms in length.

**5 AAC 27.580. WATERS CLOSED TO HERRING FISHING.** During the period June 12 through October 31, herring may not be taken in waters described in 5 AAC 15.350 and 5 AAC 39.290.

**5 AAC 27.590. BUYER AND TENDER REPORTING REQUIREMENTS.** In addition to the requirements of 5 AAC 39.130(f) each tender operator and each buyer or his agents shall report in person to and register with a local representative of the department upon arrival in the statistical area before commencing operations and before changing location of the operation. Each buyer shall:

(1) identify all vessels to be employed in transporting or processing herring and shall register such vessels with a local representative of the department located in the statistical area before transporting or processing herring;

(2) make daily reports of all herring purchased from fishermen, and other processing records as specified by a local representative of the department, and

(3) submit fish tickets before departure from the area and no later than 10 days after termination of buying operations in the area, or as otherwise specified by a local representative of the department.

APPENDIX I

1987 HERRING EMERGENCY ORDER ABSTRACT

EMERGENCY ORDER NO. 4-F-L-01-87

ISSUED AT: Kodiak, April 14, 1987

EXPLANATION: This emergency order establishes the Chignik Management Area commercial herring fishing periods during the sac roe season (April 15 through June 30) which will begin at 12:00 noon on every odd numbered day and end at 12:00 noon on the following even numbered day. The first period will begin at 12:00 noon April 15 and end at 12:00 noon April 16 and henceforth on all odd numbered days of the month separated by 24 hour closures until 12:00 noon June 30. During the food and bait season (August 15 through February 28) the fishery will be open 24 hours per day, 7 days per week. This emergency order also closes the Big River section to herring fishing until further notice.

JUSTIFICATION:

Regulations adopted by the Alaska Board of Fisheries established that weekly fishing periods for herring in the Chignik area would be announced by emergency order. During the sac-ro-e season (April 15 through June 30) herring stocks are concentrated and are vulnerable to over exploitation. The 24 hour on and 24 hour off fishery will reduce the time that stocks are subject to exploitation and will allow the Department more time to collect catch information and assess the situation(s). During the food and bait season (August 15 through February 29) effort is anticipated to be low and stocks dispersed, therefore a 7 day per week fishery is justified.

The Big River section has not received any appreciable recruitment of herring into that fishery since 1980 when it was first harvested. The trend in this stock's age composition has regressed from a healthy 1980 biomass dominated by 4 and 5 year olds to a diminished biomass in 1986 dominated by 8 and 9 year old fish. Consequently the Big River section (272-70 Amber Bay and 272-60 Aniakchak Bay) will remain closed in 1987 until a biomass of multi-age herring is present in sufficient quantity and of healthy age composition to warrant exploitation.

-----

EMERGENCY ORDER NO. 4-F-L-02-87

Issued at: Chignik, May 7, 1987

EXPLANATION: This emergency order closes the Ivanof Bay Section in the Perryville District of the Chignik Management Area to commercial herring fishing until further notice.

JUSTIFICATION:

The commercial herring harvest from Ivanof Bay to date is approximately 12 tons. The guideline harvest level for this bay is 10 tons. During the commercial opening a large school (approximately 100 tons) of nursery herring (2 year olds) were wrapped up and released.

In order to protect the resource from any further harvest beyond the 10-20% exploitation rate as well as protect the recruit stocks within the bay an immediate closure of the fishery is necessary.

-----

EMERGENCY ORDER NO. 4-F-L-03-87

ISSUED AT CHIGNIK: May 16, 1987

EXPLANATION: Effective 4:00 P.M. Saturday, May 16, 1987, Lake Bay of the Chignik Bay District of the Chignik Management Area closed to commercial herring fishing. Lake Bay includes all waters southwest of a line drawn at the entrance to Lake Bay at 56°18'51" N. Lat., 158°17'30" W. Long.

JUSTIFICATION:

The commercial herring harvest from Lake Bay to date is 185 tons. The guideline harvest level for this area is 10 tons.

In order to protect the resource from any further harvest beyond the 10-20% exploitation rate an immediate closure of the fishery is necessary.

-----

EMERGENCY ORDER NO. 4-F-L-04-87

ISSUED AT CHIGNIK: May 27, 1987

EXPLANATION: Effective 8:00 P.M. Wednesday May 27, the Agripina Section of the Chignik Management Area closed to commercial herring fishing. The Agripina Section includes all waters and bays between Cape Previkhona and Kilokak Rocks. This closure will remain in effect until further notice.

JUSTIFICATION:

The commercial herring harvest from the Agripina section to date is estimated at 40 tons. The guideline harvest level for this area is 20 tons.

In order to protect the resource from any further harvest beyond the 10-20% exploitation rate an immediate closure of the fishery is necessary.

-----

# Appendix J. 1987 Tide tables.

KODIAK TIDES					
APRIL					
KODIAK DISTRICT—STANDARD TIME					
HIGH	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	ft.
1 Wed	3:10	9.4	3:59	7.2	
2 Thu	3:39	9.0	4:42	6.5	
3 Fri	4:11	8.5	5:31	5.2	
4 Sat	4:47	8.0	6:31	5.2	
DAYLIGHT TIME BEGINS					
5 Sun	6:33	7.4	8:57	4.8	
6 Mon	7:34	6.8	10:36	3.0	
7 Tue	9:03	6.5	11:39	5.5	
8 Wed	10:33	6.6			
9 Thu	0:15	6.1			
10 Fri	11:39	7.0			
11 Sat	0:47	6.7	12:31	7.3	
12 Sun	1:13	7.4	1:13	7.7	
13 Mon	1:40	8.1	1:56	7.9	
14 Tue	2:07	8.7	2:38	8.0	
15 Wed	2:37	9.2	3:19	7.9	
16 Thu	3:06	9.6	4:01	7.6	
17 Fri	3:38	9.7	4:44	7.2	
18 Sat	4:15	9.7	5:34	6.6	
19 Sun	4:57	9.4	6:33	6.1	
20 Mon	5:48	8.9	7:46	5.7	
21 Tue	6:50	8.2	9:11	5.7	
22 Wed	8:13	7.6	10:28	6.2	
23 Thu	9:46	7.4	11:25	6.9	
24 Fri	11:09	7.4			
25 Sat	0:10	7.7	12:15	7.6	
26 Sun	0:47	8.4	1:11	7.7	
27 Mon	1:24	9.0	1:59	7.8	
28 Tue	1:58	9.4	2:47	7.7	
29 Wed	2:30	9.6	3:27	7.5	
30 Thu	3:01	9.5	4:07	7.2	

KODIAK TIDES					
APRIL					
KODIAK DISTRICT—STANDARD TIME					
LOW	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	ft.
1 Wed	9:42	-0.9	9:30	1.6	
2 Thu	10:21	-0.5	9:59	2.3	
3 Fri	11:06	0.0	10:31	2.9	
4 Sat	11:57	0.7	11:09	3.5	
DAYLIGHT TIME BEGINS					
5 Sun			2:00	1.2	
6 Mon	1:02	4.0	3:19	1.5	
7 Tue	2:42	4.2	4:37	1.4	
8 Wed	4:27	3.9	5:33	1.1	
9 Thu	5:38	3.2	6:15	0.8	
10 Fri	6:28	2.3	6:52	0.6	
11 Sat	7:09	1.4	7:24	0.5	
12 Sun	7:48	0.5	7:54	0.3	
13 Mon	8:24	-0.4	8:25	0.7	
14 Tue	9:02	-1.0	8:57	1.0	
15 Wed	9:41	-1.5	9:29	1.4	
16 Thu	10:23	-1.6	10:05	1.8	
17 Fri	11:09	-1.5	10:44	2.3	
18 Sat			12:01	-1.1	
19 Sun			11:32	2.9	
20 Mon	0:31	3.4	2:14	-0.1	
21 Tue	1:57	3.6	3:32	0.2	
22 Wed	3:40	3.4	4:42	0.3	
23 Thu	5:07	2.5	5:38	0.3	
24 Fri	6:11	1.4	6:26	0.4	
25 Sat	7:03	0.4	7:08	0.6	
26 Sun	7:48	-0.5	7:43	0.8	
27 Mon	8:29	-1.1	8:20	1.2	
28 Tue	9:06	-1.4	8:54	1.6	
29 Wed	9:43	-1.4	9:26	2.0	
30 Thu	10:23	-1.2	9:58	2.5	

KODIAK TIDES					
MAY					
KODIAK DISTRICT—DAYLIGHT TIME					
HIGH	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	ft.
1 Fri	4:05	9.0	5:31	6.3	
2 Sat	4:39	8.5	6:17	5.9	
3 Sun	5:16	8.0	7:12	5.5	
4 Mon	6:01	7.4	8:18	5.4	
5 Tue	6:57	6.9	9:27	5.3	
6 Wed	8:11	6.4	10:24	6.0	
7 Thu	9:37	6.2	11:06	6.5	
8 Fri	10:50	6.3	11:41	7.2	
9 Sat	11:52	6.5			
10 Sun	0:15	7.9	12:47	6.8	
11 Mon	0:47	8.6	1:33	7.0	
12 Tue	1:19	9.2	2:23	7.2	
13 Wed	1:56	9.8	3:09	7.3	
14 Thu	2:35	10.1	3:55	7.2	
15 Fri	3:14	10.2	4:44	7.0	
16 Sat	3:59	10.1	5:37	6.7	
17 Sun	4:47	9.6	6:35	6.5	
18 Mon	5:42	9.0	7:40	6.5	
19 Tue	6:49	8.1	8:43	6.7	
20 Wed	8:07	7.4	9:45	7.1	
21 Thu	9:33	6.8	10:40	7.7	
22 Fri	10:53	6.5	11:25	8.3	
23 Sat			12:03	6.5	
24 Sun	0:07	8.8	1:00	6.6	
25 Mon	0:46	9.1	1:52	6.7	
26 Tue	1:22	9.3	2:39	6.7	
27 Wed	1:57	9.4	3:20	6.7	
28 Thu	2:33	9.4	4:05	6.6	
29 Fri	3:08	9.2	4:40	6.5	
30 Sat	3:41	8.9	5:19	6.3	
31 Sun	4:18	8.6	6:01	6.1	

KODIAK TIDES					
MAY					
KODIAK DISTRICT—DAYLIGHT TIME					
LOW	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	ft.
1 Fri	11:00	-0.8	10:33	2.9	
2 Sat	11:40	-0.3	11:08	3.3	
3 Sun			12:27	0.2	
4 Mon			11:53	3.7	
5 Tue	0:53	4.0	2:20	1.1	
6 Wed	2:16	4.0	3:21	1.3	
7 Thu	3:45	3.6	4:16	1.4	
8 Fri	4:59	2.9	5:06	1.4	
9 Sat	5:52	1.9	5:49	1.4	
10 Sun	6:37	0.8	6:27	1.5	
11 Mon	7:19	-0.2	7:08	1.6	
12 Tue	8:01	-1.1	7:46	1.7	
13 Wed	8:44	-1.8	8:22	1.9	
14 Thu	9:26	-2.2	9:05	2.1	
15 Fri	10:13	-2.3	9:49	2.4	
16 Sat	11:03	-2.1	10:38	2.7	
17 Sun	11:55	-1.6	11:34	3.0	
18 Mon			12:51	-1.9	
19 Tue	0:45	3.2	1:54	-0.4	
20 Wed	2:11	3.1	2:57	0.2	
21 Thu	3:36	2.6	3:57	0.7	
22 Fri	4:56	1.8	4:51	1.1	
23 Sat	5:57	0.8	5:41	1.5	
24 Sun	6:50	0.0	6:26	1.8	
25 Mon	7:35	-0.7	7:08	2.1	
26 Tue	8:14	-1.2	7:46	2.4	
27 Wed	8:54	-1.4	8:25	2.6	
28 Thu	9:29	-1.4	9:00	2.8	
29 Fri	10:07	-1.3	9:36	3.0	
30 Sat	10:42	-1.0	10:15	3.2	
31 Sun	11:21	-0.6	10:54	3.3	

KODIAK TIDES					
JUNE					
KODIAK DISTRICT—DAYLIGHT TIME					
HIGH	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	ft.
1 Mon	4:55	8.1	6:46	6.1	
2 Tue	5:37	7.6	7:34	6.1	
3 Wed	6:26	7.0	8:21	6.3	
4 Thu	7:25	6.4	9:06	6.6	
5 Fri	8:37	5.9	9:51	7.1	
6 Sat	9:57	5.7	10:33	7.6	
7 Sun	11:14	5.7	11:14	8.3	
8 Mon			12:20	5.9	
9 Tue			11:57	8.9	
10 Wed	0:42	9.6	2:12	6.4	
11 Thu	1:27	10.1	3:01	6.8	
12 Fri	2:13	10.4	3:49	7.0	
13 Sat	3:00	10.5	4:41	7.1	
14 Sun	3:53	10.3	5:27	7.2	
15 Mon	4:45	9.8	6:19	7.3	
16 Tue	5:40	9.0	7:12	7.4	
17 Wed	6:41	8.0	8:04	7.6	
18 Thu	7:49	7.0	8:59	7.9	
19 Fri	9:09	6.2	9:50	8.2	
20 Sat	10:32	5.7	10:43	8.5	
21 Sun	11:49	5.6	11:28	8.7	
22 Mon			12:53	5.7	
23 Tue	0:15	8.9	1:49	5.9	
24 Wed	0:55	9.0	2:33	6.1	
25 Thu	1:37	9.1	3:14	6.3	
26 Fri	2:15	9.1	4:02	6.5	
27 Sat	2:51	9.1	4:53	6.5	
28 Sun	3:29	8.9	5:00	6.4	
29 Mon	4:04	8.7	5:35	6.6	
30 Tue	4:36	8.3	6:09	6.7	

KODIAK TIDES					
JUNE					
KODIAK DISTRICT—DAYLIGHT TIME					
LOW	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	ft.
1 Mon			12:00	-0.2	
2 Tue			11:40	3.5	
3 Wed	0:37	3.6	12:42	0.2	
4 Thu	1:42	3.5	1:25	0.6	
5 Fri	2:57	3.1	2:11	1.1	
6 Sat	4:07	2.4	3:00	1.5	
7 Sun	5:09	1.5	4:41	2.1	
8 Mon	6:05	0.4	5:33	2.3	
9 Tue	6:54	-0.6	6:20	2.4	
10 Wed	7:43	-1.5	7:11	2.4	
11 Thu	8:30	-2.2	7:59	2.4	
12 Fri	9:17	-2.6	8:49	2.4	
13 Sat	10:06	-2.7	9:42	2.4	
14 Sun	10:54	-2.5	10:38	2.4	
15 Mon	11:42	-2.0	11:37	2.4	
16 Tue			12:33	-1.3	
17 Wed	0:45	2.4	1:23	-0.4	
18 Thu	1:59	2.2	2:12	0.4	
19 Fri	3:15	1.8	3:04	1.3	
20 Sat	4:30	1.3	4:59	2.0	
21 Sun	5:37	0.6	6:54	2.5	
22 Mon	6:34	0.0	7:46	2.9	
23 Tue	7:21	-0.5	8:39	3.0	
24 Wed	8:03	-0.9	9:34	3.1	
25 Thu	8:41	-1.1	10:06	3.1	
26 Fri	9:17	-1.2	10:43	3.0	
27 Sat	9:52	-1.2	11:22	3.0	
28 Sun	10:25	-1.1	12:01	2.9	
29 Mon	11:00	-0.9	12:44	2.9	
30 Tue	11:32	-0.5	11:26	2.9	

KODIAK TIDES

JULY

KODIAK DISTRICT—DAYLIGHT TIME

HIGH	A.M.	P.M.		
Date	h.m.	ft.	h.m.	ft.
1 Wed	5:16	7.7	6:43	6.8
2 Thu	5:58	7.1	7:18	7.0
3 Fri	6:49	6.4	7:56	7.3
4 Sat	7:51	5.7	8:40	7.6
5 Sun	9:09	5.2	9:28	8.0
6 Mon	10:38	5.1	10:22	8.5
7 Tue	.....	.....	12:02	5.3
8 Wed	.....	.....	11:17	9.0
9 Thu	.....	.....	1:08	5.7
10 Fri	0:15	9.6	2:02	6.2
11 Sat	1:11	10.2	2:52	6.7
12 Sun	2:04	.....	3:43	7.2
13 Mon	2:55	10.7	4:23	7.5
14 Tue	3:47	10.4	5:03	7.9
15 Wed	4:37	9.8	5:48	8.1
16 Thu	5:29	8.9	6:33	8.3
17 Fri	6:27	7.7	7:18	8.3
18 Sat	7:27	6.6	8:06	8.3
19 Sun	8:40	5.6	8:58	8.2
20 Mon	10:11	5.1	9:55	8.2
21 Tue	11:39	5.0	10:51	8.2
22 Wed	.....	.....	12:49	5.3
23 Thu	.....	.....	11:47	8.3
24 Fri	.....	.....	1:45	5.6
25 Sat	0:36	8.5	2:23	6.0
26 Sun	1:21	8.7	3:09	6.3
27 Mon	2:01	8.9	3:29	6.5
28 Tue	2:39	9.0	3:59	6.8
29 Wed	3:14	9.0	4:28	7.1
30 Thu	3:49	8.7	4:56	7.3
31 Fri	4:21	8.3	5:24	7.4
1 Jun	4:56	7.8	5:50	7.6
2 Jul	5:37	7.1	6:19	7.7

# Appendix J. 1987 Tide Tables (Continued)

KODIAK TIDES					
AUGUST					
KODIAK DISTRICT—DAYLIGHT TIME					
HIGH	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	
1 Sat	6:19	6.4	6:54	7.9	
2 Sun	7:19	5.6	7:36	8.0	
3 Mon	8:36	4.9	8:32	8.1	
4 Tue	10:21	4.7	9:41	8.4	
5 Wed	11:57	5.0	10:54	8.8	
6 Thu	.....	.....	12:59	5.7	
7 Fri	0:03	9.4	1:50	6.4	
8 Sat	1:03	10.0	2:33	7.1	
9 Sun	1:58	10.4	3:12	7.7	
10 Mon	2:50	10.5	3:54	8.3	
11 Tue	3:39	10.1	4:31	8.7	
12 Wed	4:26	9.4	5:08	8.9	
13 Thu	5:16	8.5	5:48	8.9	
14 Fri	6:06	7.3	6:28	8.7	
15 Sat	7:04	6.2	7:10	8.3	
16 Sun	8:11	5.3	8:03	7.9	
17 Mon	9:48	4.8	9:06	7.6	
18 Tue	11:30	4.8	10:20	7.3	
19 Wed	.....	.....	12:44	5.2	
20 Thu	.....	.....	11:28	7.7	
21 Fri	.....	.....	1:26	5.7	
22 Sat	0:23	8.0	1:58	6.1	
23 Sun	1:09	8.4	2:29	6.6	
24 Mon	1:48	8.7	2:54	7.0	
25 Tue	2:23	8.8	3:20	7.4	
26 Wed	2:58	8.8	3:45	7.8	
27 Thu	3:30	8.6	4:09	8.0	
28 Fri	4:05	8.2	4:34	8.2	
29 Sat	4:41	7.6	4:59	8.3	
30 Sun	5:19	7.0	5:31	8.4	
31 Mon	6:03	6.2	6:03	8.3	

KODIAK TIDES					
AUGUST					
KODIAK DISTRICT—DAYLIGHT TIME					
LOW	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	
1 Sat	0:33	1.7	12:22	1.2	
2 Sun	1:30	1.6	12:57	1.9	
3 Mon	2:38	1.4	1:44	2.6	
4 Tue	3:55	0.9	2:49	3.2	
5 Wed	5:14	0.2	4:15	3.4	
6 Thu	6:20	-0.7	5:35	3.2	
7 Fri	7:16	-1.5	6:45	2.6	
8 Sat	8:04	-2.1	7:45	1.9	
9 Sun	9:31	-2.3	8:38	1.2	
10 Mon	10:10	-1.9	9:29	0.7	
11 Tue	10:47	-1.2	10:10	0.2	
12 Wed	11:24	-0.3	.....	.....	
13 Thu	0:02	0.3	12:01	0.7	
14 Fri	0:57	0.6	12:38	1.7	
15 Sat	2:03	0.9	1:18	2.7	
16 Sun	3:19	1.1	2:13	3.4	
17 Mon	4:45	1.1	3:33	3.9	
18 Tue	5:54	0.7	5:05	3.9	
19 Wed	6:47	0.3	6:10	3.6	
20 Thu	7:27	-0.1	7:00	3.1	
21 Fri	8:02	-0.5	7:40	2.5	
22 Sat	8:31	-0.7	8:19	2.0	
23 Sun	8:59	-0.8	8:52	1.6	
24 Mon	9:27	-0.7	9:27	1.2	
25 Tue	9:52	-0.5	10:02	0.9	
26 Wed	10:17	0.0	10:38	0.7	
27 Thu	10:43	0.5	11:16	0.6	
28 Fri	11:11	1.1	.....	.....	
29 Sat	0:01	0.6	.....	.....	
30 Sun	1:40	1.8	.....	.....	
31 Mon	0:54	0.8	12:17	2.5	

KODIAK TIDES					
SEPTEMBER					
KODIAK DISTRICT—DAYLIGHT TIME					
HIGH	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	
1 Tue	8:27	4.8	7:55	8.1	
2 Wed	10:22	4.7	9:19	8.1	
3 Thu	11:49	5.3	10:45	8.4	
4 Fri	.....	.....	12:43	6.1	
5 Sat	.....	.....	11:58	9.0	
6 Sun	.....	.....	1:26	6.9	
7 Mon	1:00	9.6	2:04	7.8	
8 Tue	1:52	9.9	2:41	8.5	
9 Wed	2:41	9.8	3:17	9.1	
10 Thu	3:27	9.4	3:53	9.4	
11 Fri	4:13	8.8	4:25	9.5	
12 Sat	4:59	7.9	5:03	9.2	
13 Sun	5:45	7.0	5:39	8.8	
14 Mon	6:40	6.0	6:17	8.2	
15 Tue	7:46	5.2	7:07	7.6	
16 Wed	9:23	4.8	8:15	7.1	
17 Thu	11:09	5.0	9:43	6.9	
18 Fri	.....	.....	12:15	5.4	
19 Sat	.....	.....	11:03	7.1	
20 Sun	0:01	7.5	1:19	6.3	
21 Mon	0:47	7.9	1:45	7.1	
22 Tue	1:27	8.2	2:09	7.6	
23 Wed	2:04	8.3	2:34	8.1	
24 Thu	2:39	8.3	2:59	8.5	
25 Fri	3:15	8.2	3:24	8.8	
26 Sat	3:51	7.8	3:49	9.0	
27 Sun	4:28	7.4	4:17	9.0	
28 Mon	5:10	6.7	4:49	8.9	
29 Tue	5:58	6.0	5:29	8.7	
30 Wed	7:04	5.4	6:22	8.3	
31 Thu	8:37	5.0	7:34	7.9	

KODIAK TIDES					
SEPTEMBER					
KODIAK DISTRICT—DAYLIGHT TIME					
LOW	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	
1 Tue	2:05	0.8	1:07	3.2	
2 Wed	3:35	0.7	2:27	3.6	
3 Thu	4:58	0.2	4:14	3.6	
4 Fri	6:06	-0.5	5:43	3.0	
5 Sat	6:58	-1.1	6:46	2.0	
6 Sun	7:43	-1.5	7:41	1.0	
7 Mon	8:22	-1.6	8:28	0.1	
8 Tue	9:00	-1.4	9:17	-0.5	
9 Wed	9:35	-0.9	10:02	-0.8	
10 Thu	10:11	-0.2	10:47	-0.8	
11 Fri	10:46	0.7	11:33	-0.5	
12 Sat	11:18	1.6	.....	.....	
13 Sun	0:22	0.1	.....	.....	
14 Mon	1:15	2.5	.....	.....	
15 Tue	2:03	1.2	12:32	3.2	
16 Wed	2:33	1.3	1:31	3.9	
17 Thu	3:01	1.3	2:10	4.2	
18 Fri	3:28	1.1	2:58	3.3	
19 Sat	4:04	0.4	3:44	2.6	
20 Sun	4:54	0.4	4:34	1.9	
21 Mon	5:40	-0.1	5:18	1.2	
22 Tue	6:20	-0.1	6:03	0.6	
23 Wed	7:03	0.0	6:40	-0.3	
24 Thu	7:51	0.3	7:15	-0.5	
25 Fri	8:40	0.7	8:03	-0.5	
26 Sat	9:30	1.3	9:03	-0.5	
27 Sun	10:19	1.8	10:12	-0.3	
28 Mon	11:11	2.5	.....	.....	
29 Tue	0:38	0.0	.....	.....	
30 Wed	1:53	3.1	.....	.....	
31 Thu	1:48	0.4	12:59	3.6	

KODIAK TIDES					
OCTOBER					
KODIAK DISTRICT—DAYLIGHT TIME					
HIGH	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	
1 Thu	10:17	5.3	9:11	7.7	
2 Fri	11:29	5.9	10:40	7.9	
3 Sat	.....	.....	12:18	6.8	
4 Sun	.....	.....	11:54	8.3	
5 Mon	.....	.....	12:56	7.7	
6 Tue	0:52	8.7	1:32	8.8	
7 Wed	1:45	8.9	2:06	9.3	
8 Thu	2:31	8.8	2:39	9.7	
9 Fri	3:16	8.5	3:14	9.9	
10 Sat	4:02	8.0	3:47	9.7	
11 Sun	4:44	7.3	4:20	9.3	
12 Mon	5:29	6.6	4:54	8.8	
13 Tue	6:21	5.9	5:33	8.1	
14 Wed	7:24	5.3	6:19	7.4	
15 Thu	8:53	5.1	7:24	6.8	
16 Fri	10:20	5.2	8:54	6.4	
17 Sat	11:22	5.7	10:23	6.5	
18 Sun	11:59	6.3	11:29	6.8	
19 Mon	.....	.....	12:28	6.9	
20 Tue	0:18	7.1	12:55	7.6	
21 Wed	1:03	7.4	1:20	8.2	
22 Thu	1:40	7.6	1:48	8.7	
23 Fri	2:20	7.7	2:14	9.2	
24 Sat	3:00	7.6	2:42	9.5	
25 Sun	3:41	7.4	3:14	9.7	
26 Mon	.....	.....	.....	.....	
27 Tue	3:23	7.0	2:50	9.6	
28 Wed	4:08	6.6	3:28	9.4	
29 Thu	5:03	6.1	4:14	8.9	
30 Fri	6:09	5.7	5:11	8.3	
31 Sat	7:32	5.7	6:29	7.7	

KODIAK TIDES					
OCTOBER					
KODIAK DISTRICT—DAYLIGHT TIME					
LOW	A.M.	P.M.			
Date	h.m.	ft.	h.m.	ft.	
1 Thu	3:15	0.5	2:41	3.8	
2 Fri	4:35	0.2	4:29	3.3	
3 Sat	5:40	-0.2	5:46	2.3	
4 Sun	6:28	-0.5	6:45	1.1	
5 Mon	7:14	-0.6	7:33	0.0	
6 Tue	7:53	-0.5	8:19	-0.8	
7 Wed	8:28	-0.1	9:01	-1.4	
8 Thu	9:03	0.4	9:43	-1.6	
9 Fri	9:38	1.0	10:25	-1.4	
10 Sat	10:10	1.7	11:07	-1.0	
11 Sun	10:42	2.4	11:50	-0.3	
12 Mon	11:18	3.0	.....	.....	
13 Tue	0:42	0.4	12:01	3.6	
14 Wed	1:48	1.0	1:02	4.1	
15 Thu	3:03	1.3	2:42	4.2	
16 Fri	4:19	1.3	4:24	3.8	
17 Sat	5:13	1.2	5:31	3.1	
18 Sun	5:58	1.0	6:20	2.2	
19 Mon	6:31	0.8	6:58	1.3	
20 Tue	7:03	0.8	7:35	0.4	
21 Wed	7:32	0.8	8:07	-0.3	
22 Thu	8:04	1.0	8:43	-1.0	
23 Fri	8:34	1.2	9:21	-1.4	
24 Sat	9:06	1.6	10:00	-1.5	
25 Sun	8:41	2.0	9:42	-1.4	
26 Mon	9:17	2.4	10:31	-1.1	
27 Tue	9:59	2.9	11:30	-0.6	
28 Wed	10:56	3.4	.....	.....	
29 Thu	0:34	-0.1	12:17	3.7	
30 Fri	1:50	0.2	1:59	3.5	
31 Sat	3:01	0.3	3:32	2.7	

Appendix Table 1. 1987 Calendar weeks.

STATISTICAL WEEK	CALENDAR DATES	STATISTICAL WEEK	CALENDAR DATES
1	01/01 to 01/03	28	07/05 to 07/11
2	01/04 to 01/10	29	07/12 to 07/18
3	01/11 to 01/17	30	07/19 to 07/25
4	01/18 to 01/24	31	07/26 to 08/01
5	01/25 to 01/31	32	08/02 to 08/08
6	02/01 to 02/07	33	08/09 to 08/15
7	02/08 to 02/14	34	08/16 to 08/22
8	02/15 to 02/21	35	08/23 to 08/29
9	02/22 to 02/28	36	08/30 to 09/05
10	03/01 to 03/07	37	09/06 to 09/12
11	03/08 to 03/14	38	09/13 to 09/19
12	03/15 to 03/21	39	09/20 to 09/26
13	03/22 to 03/28	40	09/27 to 10/03
14	03/29 to 04/04	41	10/04 to 10/10
15	04/05 to 04/11	42	10/11 to 10/17
16	04/12 to 04/18	43	10/18 to 10/24
17	04/19 to 04/25	44	10/25 to 10/31
18	04/26 to 05/02	45	11/01 to 11/07
19	05/03 to 05/09	46	11/08 to 11/14
20	05/10 to 05/16	47	11/15 to 11/21
21	05/17 to 05/23	48	11/22 to 11/28
22	05/24 to 05/30	49	11/29 to 12/05
23	05/31 to 06/06	50	12/06 to 12/12
24	06/07 to 06/13	51	12/13 to 12/19
25	06/14 to 06/20	52	12/20 to 12/26
26	06/21 to 06/27	53	12/27 to 12/31
27	06/28 to 07/04		

The Alaska Department of Fish and Game administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information please write to ADF&G, P.O. Box 25526, Juneau, AK 99802-5526; U.S. Fish and Wildlife Service, 4040 N. Fairfax Drive, Suite 300 Webb, Arlington, VA 22203 or O.E.O., U.S. Department of the Interior, Washington DC 20240.

For information on alternative formats for this and other department publications, please contact the department ADA Coordinator at (voice) 907-465-6077, (TDD) 907-465-3646, or (FAX) 907-465-6078.